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The Tiberian Pronunciation Tradition of Biblical Hebrew

Volume I

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THE TIBERIAN PRONUNCIATION TRADITION OF BIBLICAL HEBREW

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The Tiberian Pronunciation Tradition of Biblical Hebrew

Including a Critical Edition and English Translation of the Sections on Consonants and Vowels in the Masoretic Treatise Hidāyat al-Qāri' 'Guide for the Reader'

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Volume I

Description of the Tiberian Pronunciation Tradition

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PREFACE

The term 'Biblical Hebrew' is generally used to refer to the form of the language that appears in the printed editions of the Hebrew Bible and it is this form that it is presented to students in grammatical textbooks and reference grammars. The form of Biblical Hebrew that is presented in printed editions, with vocalization and accent signs, has its origin in medieval manuscripts of the Bible. The vocalization and accent signs are notation systems that were created in Tiberias in the early Islamic period by scholars known as the Tiberian Masoretes. The text of the Bible that appears in the medieval Tiberian manuscripts and has been reproduced in modern printed editions is known as the Tiberian Masoretic Text or simply the Masoretic Text.

The opening sections of modern textbooks and grammars describe the pronunciation of the consonants and the vocalization signs in a matter-of-fact way. The grammatical textbooks and reference grammars in use today are heirs to centuries of tradition of grammatical works on Biblical Hebrew in Europe, which can be traced back to the Middle Ages. The paradox is that this European tradition of Biblical Hebrew grammar, even in its earliest stages in eleventh-century Spain, did not have direct access to the way the Tiberian Masoretes were pronouncing Biblical Hebrew. The descriptions of the pronunciation that we find in textbooks and grammars, therefore, do not correspond to the pronunciation of the Tiberian Masoretes, neither their pronunciation of the consonants nor their pronunciation of the

vowels, which the vocalization sign system originally represented. Rather, they are descriptions of other traditions of pronouncing Hebrew, which originate in traditions existing in Jewish communities, academic traditions of Christian Hebraists, or a combination of the two.

In the last few decades, research of a variety of manuscript sources from the medieval Middle East, some of them only recently discovered, has made it possible to reconstruct with considerable accuracy the pronunciation of the Tiberian Masoretes, which has come to be known as the 'Tiberian pronunciation tradition' or the 'Tiberian reading tradition'. It has emerged from this research that the pronunciation of the Tiberian Masoretes differed in numerous ways from the pronunciation of Biblical Hebrew that is described in modern textbooks and reference grammars.

In this book, my intention is to present the current state of knowledge of the Tiberian pronunciation tradition of Biblical Hebrew based on the extant medieval sources. It is hoped that this will help to break the mould of current grammatical descriptions of Biblical Hebrew and form a bridge between modern traditions of grammar and the school of the Masoretes of Tiberias. The main focus of the book is on the synchronic state of the Tiberian pronunciation when it was a living tradition in the early Islamic period. Some comparisons with other traditions of Hebrew from different periods are, nevertheless, made where this is thought to be appropriate.

The book is divided into two volumes. The introductory section of the first volume discusses the background of the Tiberian pronunciation tradition, with particular attention to its

historical depth, its prestigious status and its relationship with other medieval reading traditions. It also describes the various extant medieval sources that are used in the book to reconstruct the pronunciation. Chapter 1 describes the pronunciation of the consonants. Chapter 2 presents a description of the pronunciation of the vowels and *shewa*, as well as an analysis of the syllabification and metrical structure of words. Chapter 3 describes the function of the diacritical signs known as *dagesh* and *rafe*. Chapter 4 examines various hybrid types of pronunciation, which arose due to imperfect learning of the Tiberian pronunciation tradition in the Middle Ages. Chapter 5 presents a summary of the reconstructed pronunciation and sample transcriptions of some Biblical passages. It is recommended that readers who would like a quick overview of the Tiberian pronunciation should look at chapter 5 first. It contains links to oral performances of the sample transcriptions by Alex Foreman.

The second volume presents a critical edition and English translation of the sections on consonants and vowels in the Judaeo-Arabic Masoretic treatise *Hidāyat al-Qāriʾ* (‘Guide for the Reader’) by the Karaite grammarian ʾAbū al-Faraj Hārūn (eleventh century C.E.). *Hidāyat al-Qāriʾ* is one of the key medieval sources for our knowledge of the Tiberian pronunciation tradition and constant reference is made to it in the various chapters of this book. Since no complete edition and English translation of the sections on the consonants and vowels so far exists, it was decided to prepare such an edition and translation as a complement to the descriptive and analytical chapters of volume one.

This book is a spinoff from a larger project on Biblical Hebrew to revise Gesenius’ *Hebrew Grammar*. I am working on this project in collaboration with various other scholars, including

Aaron Hornkohl, Shai Heijmans and Ben Kantor, who are co-authors. I cite some of their contributions to the Gesenius grammar project in this book with due acknowledgement. I am grateful to Aaron, Shai and Ben for their help with the preparation of the book in various ways. Shai created the attractive Arabic font with Hebrew vowels and accents, which I use for the Karaite transcriptions of Hebrew. Ben skilfully laid out my edition of *Hidāyat al-Qāriʾ* in the Classical Text Editor programme, which aligned text and translation, and carefully proofread the text and translation. Many thanks also to my graduate student Estara Arrant, who drew my attention to a variety of examples of Non-Standard Tiberian vocalization in Genizah manuscripts from the database she has created for her Ph.D. research project. I am very grateful to my graduate student Joseph Habib for his help with the proofreading of the book. I also greatly appreciate the comments and corrections sent to me by Aaron Rubin and Ben Outhwaite, who read an earlier version of the book. Finally, I am very grateful to Alex Foreman, who made an impressive oral performance of the sample transcriptions.

Some aspects of the work that forms the basis of this book were funded by research grants. A British Academy small research grant supported my investigation of manuscripts of *Hidāyat al-Qāriʾ*. A grant from the Leverhulme Trust (2013–2016) supported the posts of Aaron Hornkohl and Shai Heijmans when they were gathering material for the revision of Gesenius' *Hebrew Grammar*. I acknowledge here with gratitude the support of these institutions.

I.0. INTRODUCTION

I.0.1. Pronunciation Traditions of Biblical Hebrew

Hebrew is generally thought to have ceased to be a spoken vernacular around the beginning of the third century C.E., after the destruction of the final remaining Hebrew-speaking settlements in Judaea by the Romans following the Bar-Kochba revolt. This coincides with the end of the Tannaitic period in Rabbinic tradition.[1] The surviving Hebrew texts that are datable to before this date would, therefore, have been written when Hebrew was still spoken. This includes the books of the Hebrew Bible, Qumran literature, Tannaitic Rabbinic literature, documents and epigraphy. There are references to the use of Hebrew as a vernacular in the second century C.E., for example the anecdote of the maidservant of Rabbi Yehudah ha-Nasi, who is said to have known the meanings of some Hebrew words with which the scholars of the time were not familiar (Babylonian Talmud, *Megilla* 18a, Palestinian Talmud, *Megilla* 2.2, 73a). The Bar Kochba documents in the first half of the second century C.E. contain a number of features that appear to reflect the spoken language (Mor 2013a; 2015).

Although Hebrew is thought to have ceased to be a vernacular language by the third century C.E., it remained alive in later

[1] Kutscher (1982, 115–16), Saenz-Badillos (1996, 171–72), Schniedewind (2013, 191), Y. Breuer (2013).

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periods in oral as well as written form. The oral recitation of the Hebrew Bible continued in a variety of traditions down to modern times. The Hebrew Rabbinic material of not only the Tannaitic period but also of the Amoraic period (220-500 C.E.) was composed orally. Furthermore, after Rabbinic literature was committed to writing, the oral dimension continued in reading traditions that have survived down to the present. There is a reference also to the use of Hebrew for 'spoken discourse' (לדיבור) in a saying attributed to Rabbi Yonatan of Bet-Guvrin (Palestine, third century C.E.):

> Rabbi Yonatan from Bet-Guvrin said there are four languages that are pleasant for use: Greek for singing, Latin for combat, Syriac for lamentation, and Hebrew for spoken discourse.[2]

Even as late as the tenth century one finds in a Masoretic treatise attributed to ʿEli ben Yehudah ha-Nazir (ed. Allony 1973) a description of how the author undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* in the Tiberian biblical reading, on the grounds that the Hebrew *resh* could still be heard in the local speech of the (Jewish) inhabitants of Tiberias. These references are unlikely to refer to vernacular speech. Hebrew continued to be used as a form of learned discourse among scholars in the Rabbinic period after it had ceased to be a vernacular (Smelik 2013, 109–16). It was, moreover, promoted as a language of everyday speech by the

[2] Palestinian Talmud, *Megilla* 1.11(8), 71b: אמ' ר' יונתן דבית-גוברין ארבעה לשונות נאים שישתמש בהן העולם ואילו הן לעז לזמר רומי לקרב סורסי לאילייא עברי לדיבור.

Karaite scholar Benjamin al-Nahāwendī (mid-ninth century C.E.) on ideological grounds (al-Qirqisānī 1939, VI 25.3; Khan 1992b, 157). Hebrew words and phrases, as well as Biblical Hebrew quotations, continued in the so-called 'Hebrew component' of the vernacular languages spoken by the Jews down to modern times, which, it seems, is what ʿEli ben Yehudah ha-Nazir was listening to on the streets of medieval Tiberias. A particularly large Hebrew component existed in Jewish secret languages, used mainly by merchants.[3]

When Hebrew was a spoken vernacular language before the third century C.E., it existed in a diversity of dialects, which differed on various linguistic levels (Rendsburg 2013a). This dialectal diversity existed synchronically at particular periods and there was also diachronic change in the various spoken forms of the language. Both of the synchronic and the diachronic differences in the spoken language were disguised to a large extent by the written form of the language, which was considerably standardized in its orthography and linguistic form (Rendsburg 1990; 2013b). Several differences are, nevertheless, identifiable from the surviving written evidence, some of which relate to pronunciation. We know from epigraphic evidence from the biblical period that diphthongs tended to be contracted in the northern (Israelian) dialects whereas they tended to be preserved uncontracted in the southern (Judahite) form of Hebrew, which is the basis of the standardized Biblical Hebrew language. In the Samaria ostraca, for example, one finds the orthography ין 'wine',

[3] See the entries on the Hebrew component of secret languages in the *Encyclopedia of Hebrew Language and Linguistics* (vol. 3, 511-520).

reflecting the pronunciation *yēn*, whereas the Arad ostraca from the south have the orthography יין corresponding to Masoretic Hebrew form יַ֫יִן (Bruck 2013). The shibboleth incident described in Jud. 12.1-6 is clear evidence of differences in pronunciation between the dialects of Transjordan and Cisjordan (Rendsburg 2013c). In the Second Temple Period, there were differences in dialects of Hebrew regarding the pronunciation of the guttural consonants (laryngeals and pharyngeals). In many of the Dead Sea Scrolls from Qumran datable to this period, including those containing biblical texts, and Judaean inscriptions there is evidence of the weakening of the gutturals. This is shown by the fact that they are often either omitted or interchanged in the orthography. Such weakening was presumably due to Greek influence, which was spoken in Palestine during this period, especially in the educated or urban classes, since Greek did not contain pharyngeals in its sound inventory. The Bar Kochba documents, on the other hand, exhibit remarkably little weakening of the gutturals, despite the fact that they otherwise deviate quite radically from the standard language and orthography and appear to be close reflections of the spoken language. These documents are likely, therefore, to reflect a spoken dialect that had preserved the gutturals to a large extent.[4] The biblical scrolls from Qumran which exhibit weakening of the gutturals, such as the Isaiah Scroll 1QIsa[a], therefore, reflect a particular dialectal variety of pronunciation, which was not general throughout Palestine.

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[4] See Mor (2013b; 2013a), Fassberg (2013), Morgenstern (2013, 505–6).

Some of the biblical scrolls from Qumran have an orthography close to that of the Tiberian Masoretic Text without omission or interchange of gutturals. This may be due to conservatism of orthography, but it is necessary to assume that some traditions of Biblical Hebrew at this period did preserve the gutturals and were the source of later traditions that preserved them. In the Second Temple Period there is further evidence of variation in the pronunciation of the gutturals in the Greek transcriptions of Hebrew words in the Septuagint (late first millennium B.C.E.), which reflect the preservation of the Proto-Semitic velar fricatives **ḵ* and **ġ*, e.g. Αχαζ ‘Ahaz’ (cf. Arabic *ʾakhadha* ‘he took’ = אָחָז), Γαζα ‘Gaza’ (cf. Arabic *Ghazza*, = עַזָּה). The Hebrew orthography represents the merger of the original velar fricatives with the pharyngeal fricatives ח and ע. This orthography, which was derived from Phoenician, may have concealed a distinction that was preserved in some Hebrew dialects, but it is clear that there must have been a merger in some dialects by the Second Temple Period. This is due to the fact that some sources from Qumran that are roughly contemporary with the Septuagint exhibit weakening of the pharyngeals irrespective of their historical origin.[5]

There were a number of differences in morphology across the various dialects of Hebrew when it was a spoken language. Of particular significance for the later reading traditions of Biblical Hebrew are the differences in pronouns and pronominal suffixes. In the Second Temple Period there is evidence from the

[5] For a discussion of the chronology of merger of velar fricatives with pharyngeals see Steiner (2005a).

Dead Sea Scrolls for variation between vocalic and consonantal endings of pronominal forms, e.g. in the second person forms:

2ms suffixes: ך-/כה-, ת-/תה-

2mpl forms: אתם/אתמה, תם-/תמה-, כם/כמה-

Another case of variation is found in the 3ms pronominal suffix on plural nouns, which has the forms יו-, ו- or והי- (Qimron 1986, 58–59; 2018, 269-78; Reymond 2014, 153–64).

I.0.2. The Bible in the Second Temple Period

The text of the Hebrew Bible that is reflected by the Qumran manuscripts and other sources from the Second Temple Period was pluriform and dynamically growing (Ulrich 2015, 18). There were variant literary editions of many of the biblical books, these being particularly numerous in the Pentateuch (Tov 2016). A sizeable proportion of the Qumran biblical manuscripts, however, exhibit a text that is close to that of the medieval Masoretic Text. These have been termed by Emanuel Tov 'proto-Masoretic' or, in his more recent work (Tov 2012, 107–9) as 'Masoretic-like' texts. These show us that great efforts were made in some circles, apparently the Temple authorities, to preserve a stable text. In Talmudic literature, there are reports of three scrolls of the Pentateuch that were found in the Temple court. These differed from one another in small details. They were carefully collated and differences were corrected towards the majority reading.[6] These activities were motivated, it seems, by a desire to preserve

[6] The sources are discussed in detail by Talmon (1962). See also Ofer (2019, 88).

and level variants in one particular type of text, but not necessarily to standardize and eliminate rival texts (Tov 2014; van der Kooij 2014). This is clearly shown by the fact that such Masoretic-like texts exist alongside other types of biblical texts in the Qumran corpus that exhibit a variety of substantial differences from the Masoretic Text. Furthermore, the Masoretic-like texts from Qumran themselves exhibit some degree of diversity, since minor textual differences are found from one manuscript to another. Some hold the view that the Masoretic-like texts did not represent a central authoritative type of a text but rather one of several forms of text that were of equal status. Doubts are cast on the existence of sufficient cohesion in Judaism in the late Second Temple Period or of a sufficiently acknowledged leadership to make it conceivable that a majority of Jews recognized a single authoritative text (Ulrich 2015, 19). Lim (2013, 126) draws attention to the fact that different types of text are sometimes cited side-by-side, which he presents as evidence that there was no preference for one particular type of text. A further issue is the selection of the text of the Masoretic-like manuscripts. It is now generally agreed that this text was selected largely by chance rather than due to the archaic nature of the text or its perceived accuracy.

Despite the pluriformity of the biblical text that is reflected by the Qumran manuscripts, after the destruction of the Temple in 70 C.E. the Masoretic type of text was the only text tradition that continued to be transmitted in Jewish communities. Fragments of biblical scrolls discovered in sites outside Qumran datable to the first two centuries C.E. contain a consonantal text

that is identical with that of the medieval Masoretic manuscripts, even in the smallest details of orthography and cancellation dots above letters. These include fragments found in Masada (first century C.E.) and the somewhat later sites of Wadi Sdeir (Naḥal David), Naḥal Ḥever, Wādī Murabbaʿāt and Naḥal Ṣeʾelim (early second century C.E.). The same applies to the recently published charred fragments of a scroll of Leviticus from En Gedi, which have been dated to roughly the same period (M. Segal et al. 2016). According to Tov (2008, 150), these texts from communities outside Qumran constitute an 'inner circle' of proto-Masoretic texts that derive directly from Temple circles and were copied from the master copy in the Temple court. The proto-Masoretic texts of Qumran, on the other hand, formed a second transmission circle copied from the inner circle, and so exhibits small differences.

The exclusive transmission of the proto-Masoretic tradition in Judaism is nowadays generally thought to be the consequence of historical events. Power and influence were gradually transferred from the priestly Sadducees to the Pharisees (Schiffman 1991, 112). The Pharisees, who as part of this process espoused the proto-Masoretic text from the priestly authorities, constituted the only organized Jewish group that survived the destruction of the Temple (Albrektson 1978; Tov 2012).

Several scholars have drawn attention to the interaction and interdependence of oral and written tradition in the formation and transmission of the Hebrew Bible through the first millennium B.C.E. down to the destruction of the Second Temple, for example Nyberg (1934), Niditch (1996), Person (1998; 2010)

and Carr (2005). Carr, in particular, stresses the fact that even after the textualization of Scripture in written form in the first millennium B.C.E., the written text remained combined with a tradition of oral reading. The oral tradition of reading was memorized and the texts were learnt as part of an educational process, which has parallels in other ancient Near Eastern cultures. Such a tradition of transmission relied not only on written texts but also on teachers to pass on the oral traditions to pupils. Such was the importance and self-sufficiency of the oral tradition of the text, claims Carr, that at times of crisis, such as the Babylonian exile, it may have been used to regenerate lost written forms of the text. Raymond Person argues that the oral mind-set of ancient Hebrew scribes influenced the way they copied texts, in that they did not feel obliged to replicate the texts word by word, but preserved the texts' meaning as a dynamic tradition like performers of oral epics, with numerous small adaptations. This resulted in a pluriformity of texts, which were nevertheless understood as faithful representations of the tradition.

I.0.3. The Bible in the Middle Ages

After the destruction of the Second Temple, the Hebrew Bible continued to be transmitted in a process similar to that attributed by Carr to the earlier period, i.e. there was an intertwining of written text and oral reading tradition. The written text was copied by scribes and the memory of the oral reading tradition was passed on from generation to generation by teachers. The fact that the Hebrew Bible lost its pluriformity in its surviving written consonantal text after the Second Temple Period does not

mean it lost pluriformity also in its oral transmission. The aforementioned fragments of biblical scrolls from the period after the destruction of the Temple must have been recited with an oral reading tradition. Just as the consonantal text (*ketiv*) of the medieval Masoretic manuscripts corresponded to the written consonantal text of these early scrolls, it is likely that the medieval oral reading of the Middle Ages, which is represented by the Masoretic vocalization signs, also had a close correspondence to what was being recited orally at the beginning of the first millennium C.E. There is, indeed, evidence that the medieval reading tradition had its roots in the Second Temple Period (§I.0.8.).

The reading traditions of Biblical Hebrew that were transmitted after Hebrew ceased to be a spoken vernacular language exhibit diversity in phonology and morphology, some of which is likely to have had its roots in the dialectal diversity of spoken Hebrew at earlier periods.

We can distinguish broadly three stages of attestation of the later reading traditions:

(i) The pre-Masoretic Greek and Latin transcriptions datable to the first half of the first millennium C.E. The most important sources from this period are the Greek transcriptions found in the second column of the Hexapla of Origen (c. 185–254 C.E.) and the Latin transcriptions in the Vulgate and writings of Jerome (346–420 C.E.). In addition to these, transcriptions are sporadically found in late Greek translations, such as Aquila, Symmachus and Theodotion, and in the writings of the Church fathers.

(ii) The medieval traditions reflected by vocalized manuscripts and other sources. In addition to the Tiberian vocalization system, medieval manuscripts are extant that contain other vocalization sign systems, which reflect different reading traditions.

(iii) The reading traditions that have survived in Jewish communities in modern times.

The reading traditions of the Bible in Palestine reflected by the Greek transcriptions of Origen and the Latin works of Jerome exhibit a number of features that can be correlated with some of the dialectal features mention in §I.0.1. They appear to have preserved the gutturals, although they are not directly represented by the Greek and Latin script, and so have their roots in dialectal pronunciations in which these consonants were not weakened. The 2ms pronominal suffixes are generally transcribed without a following vowel and so correspond to the variants ending in consonants reflected by the orthographies ך- and ת- in Qumran sources, e.g., *σεδκαχ* (Tiberian: צִדְקֶ֣ךָ) 'your righteousness' (Origen, Psa. 35.28), *φαρασθ* (Tiberian: פָּרַ֣צְתָּ) 'you have breached' (Origen, Psa. 89.41); *phalach* vs. פָּֽעָלְךָ֗, 'your work' (Jerome, Hab. 3.2), *calloth* (Tiberian: קַלּֽוֹתָ) 'you are vile' (Jerome, Nah. 1.14).[7]

The reading traditions of the Hebrew Bible that are reflected by the medieval systems of vocalization signs were transmitted orally for many generations during the first millennium C.E. Their commitment to written form by means of

[7] See Sperber (1937), Brønno (1943; 1970), Sutcliffe (1948), Janssens (1982), Yuditsky (2013; 2017), Kantor (2017).

vocalization sign systems was a textualization of oral traditions. This was no doubt stimulated by the general increasing shift from oral to written transmission of knowledge in the early Islamic period.[8] This is a phenomenon that affected the whole of society in the Middle East at this period. It is likely to have been brought about, in part at least, by the archival documentary culture of the Abbasid bureaucracy, which developed in the eighth century C.E., and the spread in the production of paper at that period.[9]

The systems of vocalization signs that were developed in the Middle Ages reflect three major traditions of pronunciation, which are normally referred to as the Tiberian, Babylonian and Palestinian traditions. The Palestinian pronunciation is reflected also by some manuscripts vocalized with Tiberian vowel signs. This latter type of vocalization will be referred to as Non-Standard Tiberian vocalization (§I.0.13.6.). Although the sign systems were a creation of the Middle Ages, the pronunciation traditions that they reflect had their roots in an earlier period and had been transmitted orally for many generations. There is some

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[8] For a detailed discussion see Schoeler (2006) and Bloom (2010).

[9] For the documentary culture of the Abbasid administration see Sijpesteijn (2007), van Berkel (2014), Khan (2007, 13–65) and for the spread of paper at this period see Bloom (2001). An analogy can be identified in the increase of written culture in the kingdom of the Judean king Hezekiah in the eighth century B.C.E. According to Schniedewind (2004; 2013) this was stimulated by the increase in administrative bureaucracy and urbanization. The role of bureaucracy and documentary culture appears to have been a catalyst to written culture also in medieval Europe; cf. Clanchy (2013).

evidence that they originated in the Second Temple Period (§I.0.8.). They share more features among themselves than they do with the Samaritan pronunciation tradition, which was transmitted orally by the Samaritan community through the Middle Ages down to modern times. This suggests that they were more closely related, due to a common origin and/or due to convergence through communal contact. They nevertheless diverged from one another in a number of ways in phonology and morphology. The distinctness of the Samaritan tradition of reading reflects the fact that it split from the Jewish traditions with the separation of the Samaritan community from Judaism at an early period.

The various Jewish reading traditions had distinctive vowel systems. The Tiberian pronunciation tradition distinguished the vowel qualities [a] (*pataḥ*), [ɔ] (*qameṣ*), [e] (*ṣere*) and [ɛ] (*segol*). The Babylonian vocalization system lacked a sign for *segol* and generally used a *pataḥ* sign where Tiberian had *segol*, suggesting that Babylonian pronunciation did not distinguish between the qualities [a] and [ɛ], but only had the quality [a].[10] The Palestinian pronunciation tradition did not distinguish between *pataḥ* and *qameṣ*, on the one hand, and between *ṣere* and *segol*, on the

[10] The Babylonian tradition has been exhaustively described by Yeivin (1985), which is the most authoritative scholarly source. Important earlier studies of manuscripts with Babylonian vocalization were made by Kahle (1902; 1913; 1928). For an overview of the distinctive features of Babylonian vocalization and the reading traditions it reflects see Khan (2013f) and Heijmans (2016).

other, but rather had only one 'a' vowel and one 'e' vowel.[11] There was, however, internal diversity within these traditions of pronunciation. This applied in particular to the Babylonian and the Palestinian traditions, which exhibit a considerable amount of variation both in the sign systems and the pronunciation these systems reflect in the medieval manuscripts. The Tiberian vocalization system and the pronunciation it reflects are more uniform and standardized than the other traditions, but, nevertheless, there is some internal diversity (§I.0.10).

I.0.4. The Tiberian Masoretic Tradition

The textualization of the orally transmitted Tiberian reading tradition was carried out by a circle of scholars in Tiberias known as Masoretes. The Masoretes (known in Hebrew as בַּעֲלֵי מָסֹרָה) were scholars who devoted themselves to preserving the traditions of writing and reading the Bible. Their name derives from the Hebrew term *masora* or *masoret*, the meaning of which is generally thought to be 'transmission of traditions'.[12] The

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[11] The most important scholarly studies of the Palestinian vocalization include Kahle (1930), Dietrich (1968), Revell (1970a; 1970b; 1977), Chiesa (1978) and Yahalom (1997). For overviews of the system see Heijmans (2013b) and Yahalom (2016).

[12] There is no complete consensus concerning the original meaning or etymology of the term. It seems to be connected with the Rabbinic Hebrew verb מָסַר 'to hand over', though this may be a denominal form. The noun מָסֹרֶת occurs in Ezek. 20.37, which is generally understood today as 'bond' (< אסר). One of its ancient interpretations, however, was 'number' (cf. Septuagint ἀριθμῷ). As we shall see, counting letters

Tiberian Masoretes were active over a period of several centuries in the second half of the first millennium C.E. The medieval sources refer to several generations of Masoretes, some of them belonging to the same family. The most famous of these families is that of Aharon ben Asher (tenth century), whose forebears were engaged in Masoretic activities over five generations.[13] The Masoretes continued the work of the *soferim* ('scribes') of the Talmudic and Second Temple periods, who were also occupied with the correct transmission of the biblical text.[14]

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and words to ensure the correct preservation of the text was one of the activities of the Masoretes. The word occurs also in Mishnah *Avot* 3.14 in a statement attributed to Rabbi Aqiva (c. 50-135 C.E.) מסרת סיג לתורה 'The *masoret* is a fence for the Torah', where it may have been originally used with the same sense (i.e. 'counting' of letters/words). Ben-Ḥayyim (1957b) has suggested that the verb מסר in Hebrew actually had the meaning of 'to count', as did its cognate in Samaritan Aramaic. The form מָסֹרָה is a variant feminine pattern of the noun. The form מַסֹּרֶת or מַסֹּרָה, which is reflected in the English spelling 'Massorah', has no textual basis but is a modern reconstruction on the analogy of the pattern found in nouns such as כַּפֹּרֶת 'mercy seat' and בַּצֹּרֶת 'dearth'.

[13] Asher 'the elder', the great-great-grandfather of Aharon, probably lived in the second half of the eighth century C.E.; cf. Kahle (1959, 75–82; 1927, vol. 1, 39).

[14] According to the Babylonian Talmud (*Qiddushin* 30a) the *soferim* acquired their name from the fact that they counted (Hebrew ספר) all the letters of the Pentateuch. As we have seen above the term מָסֹרֶת was probably originally understood in the sense of 'counting'. This connection with the Talmudic interpretation of the term *soferim* may be more than coincidental, in that מָסֹרֶת may have been intended originally

The Tiberian Masoretes developed what can be termed the Tiberian Masoretic tradition. This was a body of tradition that gradually took shape over two or three centuries and continued to grow until it was finally fixed, and the activities of the Masoretes ceased, at the beginning of the second millennium. During the same period, circles of Masoretes are known to have existed also in Iraq. It is the tradition of the Tiberian Masoretes, however, that had become virtually the exclusive Masoretic tradition in Judaism by the late Middle Ages and has been followed by all printed editions of the Hebrew Bible.

The Tiberian Masoretic tradition is recorded in numerous medieval manuscripts. The majority of these were written after 1100 C.E. and are copies of older manuscripts that were made in various Jewish communities. The early printed editions are based on these late medieval manuscripts. The most authoritative of these early editions was the so-called second Rabbinic Bible (i.e. the Bible text combined with commentaries and translations, known as *Miqraʾot Gedolot*) edited by Jacob ben Ḥayyim ben Adoniyahu and printed at the press of Daniel Bomberg in Venice between 1524 and 1525. These early Rabbinic Bibles appear to have been based on more than one manuscript (Penkower 1983). This came to be regarded as a textus receptus and was used as the basis for many subsequent editions of the Hebrew Bible.

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to refer to the activity of the *soferim*. In the Middle Ages the term *sofer* acquired the narrower sense of ‘copyist’. According to a medieval list of Masoretes published by Mann (1935, 2:44) the chain of Masoretes began with Ezra the scribe.

A small number of surviving manuscripts are first-hand records of the Tiberian Masoretic tradition. These were written in the Middle East before 1100 C.E., when the Masoretes were still active in the tenth century or in the period immediately after the cessation of their activities in the eleventh century. They are, therefore, the most reliable witnesses of the Tiberian Masoretic tradition. They all come from the end, or near the end, of the Masoretic period, when the Masoretic tradition had become fixed in most of its details. After 1100 C.E. the fixed tradition was transmitted by generations of scribes. Some of the modern editions of the Bible are based on these early manuscripts, e.g. the *Biblia Hebraica* from the third edition (1929–1937) onwards (the latest edition of which is the *Biblia Hebraica Quinta*, 2004–), *The Hebrew University Bible* (1975–), the editions by Aron Dotan (1973; revised 2001) and Mordechai Breuer (1977–1982) and the modern edition of the Rabbinic Bible by Menachem Cohen (known as *Ha-Keter*, Ramat-Gan, 1992–).

The Tiberian Masoretic tradition can be divided into the following components:

1. The consonantal text of the Hebrew Bible.
2. The layout of the text and codicological form of the manuscripts.
3. The indications of divisions of paragraphs (known in Hebrew as *pisqaʾot* or *parashiyyot*).
4. The accent signs, which indicated the musical cantillation of the text and also the position of the main stress in a word.

5. The vocalization, which indicated the pronunciation of the vowels and some details of the pronunciation of the consonants in the reading of the text.
6. Notes on the text, written in the margins of the manuscript.
7. Masoretic treatises. Some manuscripts have appendices at the end of the biblical text containing various treatises on aspects of the teachings of the Masoretes.
8. Orally transmitted reading tradition.

The first seven of these components are written, whereas the eighth existed only orally. The orally transmitted Tiberian reading tradition was passed on from one generation to the next. The reading tradition is only partially represented in graphic form by the vocalization and accent signs. These written components were created during the Masoretic period in the last third of the first millennium C.E. The most famous Masorete, Aharon ben Asher, who lived in the tenth century, represented the last generation. At the close of the Masoretic period at the beginning of the second millennium, the written components of the Tiberian Masoretic tradition had become fixed and were transmitted in this fixed form by later scribes. By contrast, the oral component, i.e. the Tiberian reading tradition, was soon forgotten and appears not to have been transmitted much beyond the twelfth century. As a result, the Tiberian vocalization signs came to be read according to the various local traditions of Hebrew pronunciation, most of them influenced by the vernacular languages of the communities concerned. The vocalization and accents were no longer direct representations of the way in which

the biblical text was recited and they became fossilized written components of the text. Since the Tiberian oral tradition of reading did not survive down to modern times, the letters, vocalization and accent signs are symbols that require interpretation. This interpretation is little more than speculation unless we examine extant sources that were written by medieval scholars and scribes who had direct access to the Tiberian pronunciation when it was still a living oral tradition. The description of the Tiberian pronunciation that is presented in this book is based on such medieval sources. Our main concern will be with the pronunciation of the vowels and consonants.

The Tiberian Masoretic manuscripts are codices, i.e. books consisting of collections of double-leaves that were stitched together. A Bible codex was referred to in medieval Hebrew sources as a מחזור *maḥzor*, as opposed to a scroll, which was referred to as a ספר *sefer*. The term *maḥzor* later came to designate specifically a codex containing a prayer-book for festivals. Another term that was used for a Bible codex in the Middle Ages was מצחף *miṣḥaf*, which is an Arabic loanword (< Arabic *muṣḥaf*).[15] The Hebrew Bible began to be produced in codex form during the Islamic period. The earliest surviving codices with explicitly dated colophons were written in the tenth century C.E. All of these originate from the Jewish communities in the Middle East. There is indirect evidence from some Rabbinic sources that

[15] The Arabic word *muṣḥaf* is itself a loanword from Ethiopic *maṣḥaf*, which means 'book', or specifically 'Scripture', see Leslau (1987, s.v. *ṣaḥafa*).

the codex had been adopted for Hebrew Bibles already in the eighth century C.E.[16]

Previously, the Hebrew Bible was always written in a scroll. After the introduction of the codex, scrolls continued to be used for writing the Hebrew Bible. Each type of manuscript, however, had a different function. The scrolls were used for public liturgical reading in the synagogues, whereas the codices were used for study purposes and non-liturgical reading. The scroll was the ancient form of manuscript that was hallowed by liturgical tradition and it was regarded as unacceptable by the Masoretes to change the custom of writing the scroll by adding the various written components of the Masoretic tradition that they developed, such as vocalization, accents and marginal notes. The codex had no such tradition behind it in Judaism and so the Masoretes felt free to introduce into this type of manuscripts the newly developed written Masoretic components.[17] The desire to commit to writing in the Middle Ages many components of the Masoretic tradition that had been previously transmitted orally was, no doubt, one of the main motivations for the adoption of the codex at this period. It had been available as a format of book production since the Roman period. It started to be used for the writing of Christian Bibles as early as the second century C.E. The earliest extant datable codices of the Qurʾān pre-date the dated codices of the Hebrew Bible by about two centuries. The fact that

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[16] See Beit-Arié et al. (1997), Glatzer (1989, 260–63), Outhwaite (2018, 323).

[17] For the association of the scribal innovations with changes in the physical form of manuscripts see Khan (1990b).

one of the medieval Hebrew terms for Bible codex, *miṣḥaf*, is a loanword from Arabic (*muṣḥaf*) suggests, indeed, that the Jews borrowed the format from the Muslims. We may say that the liturgical scroll remained the core of the biblical tradition, whereas the Masoretic codex was conceived as auxiliary to this. This distinction of function between liturgical scrolls with no vocalization, accents or Masoretic notes, on the one hand, and Masoretic codices, on the other, has continued in Jewish communities down to the present day. Occasionally in the Middle Ages, Masoretic additions were made to scrolls if they had, for some reason, become unfit for liturgical use. The fact that the leaves of a codex were written on both sides, unlike biblical scrolls, and its overall practical format meant that the entire twenty-four books of the Bible could be bound together in a single volume. The less practical scroll format meant that the books of the Bible had to be divided up into a series of separate scrolls. In many cases, however, codices consisted of only sections of the Bible, such as the major divisions of Pentateuch (*Torah*), Prophets (*Neviʾim*) and Writings (*Ketuvim*), or smaller units.

The scrolls generally differed from Masoretic codices not only in the lack of vocalization, accents and Masoretic notes, but also in the addition of ornamental strokes called *tagin* ('crowns') to the Hebrew letters *shin, ʿayin, ṭet, nun, zayin, gimel* and *ṣade*.

In the Masoretic period, the task of writing codices was generally divided between two specialist scribes. The copying of the consonantal text was entrusted to a scribe known as a *sofer*, who also wrote scrolls. The vocalization, accents and Masoretic

notes, on the other hand, were generally added by a scribe known as a *naqdan* ('pointer', i.e. vocalizer) or by a Masorete. This reflects the fact that the tradition of transmitting the consonantal text and the tradition of transmitting the Masoretic components were not completely integrated. According to the colophon of the Aleppo Codex, for example, the text was copied by the scribe Shlomo ben Buyāʿā and its vocalization and Masora were supplied by Aharon ben Asher.[18] For the scribe who wrote the consonantal text the base of authority was constituted by an existing authoritative exemplar manuscript.[19] For the *naqdan* the base of authority was a master teacher of the oral reading tradition. In the case of the Aleppo Codex, the *naqdan* and the master teacher were one and the same person. By contrast, the Codex Leningradensis, which was produced in the early eleventh century after the close of Masoretic period and the death of the last authorities of the Tiberian oral tradition, was written and vocalized by the same scribe, Samuel ben Jacob.[20]

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[18] The original inscriptions are now lost and survive only in copies (Kahle 1930, 7–12; Ofer 1989). The scribe Shlomo ben Buyāʿā also wrote the manuscript I Firkovitch II.17 (L^1 according to the abbreviation of Yeivin 1980, 22-23), but the *naqdan* was different from that of A and so the vocalization and accentuation.

[19] In one extant Judaeo-Arabic document from the Genizah the Persian loanword *namūdhaj* 'model, exemplar' is used to refer to such a model manuscript (Outhwaite 2018, 331).

[20] There is evidence from colophons that other Masoretic codices, also apparently from the post-Masoretic period, were produced entirely by a single scribe (Outhwaite 2018, 329).

So far we have made a distinction between manuscripts of the Hebrew Bible written in scrolls and those written in Masoretic codices and also between the early Tiberian codices datable to before 1100 and later ones. In the early period, coinciding with or close to the time when the Masoretes were active, we can distinguish between various types of Hebrew Bible codices. The type of codex that has been referred to in the preceding discussion is what can be termed a 'model' codex, which was carefully written and accurately preserved the written components of the Tiberian Masoretic tradition. Such manuscripts were generally in the possession of a community, as is shown by their colophons, and were kept in a public place of study and worship for consultation and copying (to produce both codices and scrolls). References to various model codices and their readings are found in the Masoretic notes, e.g. Codex Muggah, Codex Hilleli, Codex Zambuqi and Codex Yerushalmi (Ginsburg 1897, 429–33). Sometimes accurately written manuscripts also contain the text of an Aramaic Targum.

In addition to these model Masoretic codices, there existed numerous so-called 'popular' Bible codices, which were generally in the possession of private individuals. These were not written with such precision as the model codices and usually did not include all the written components of the Tiberian Masoretic tradition. Often they contain no accents or Masoretic notes but only vocalization, and this may deviate from the standard Tiberian system of vocalization in a number of details. Some

popular Bible manuscripts were accompanied by an Aramaic Targum or an Arabic translation and commentary.[21]

All popular manuscripts were not necessarily written carelessly. The crucial feature of their production was that the scribes felt less bound by tradition than in the copying of the model manuscripts. Many of them are distinguished from the model manuscripts also in their smaller dimensions and their different page-layout (Arrant 2020).

There were, therefore, three classes of Hebrew Bible manuscript in the early Middle Ages: (i) scrolls used for public reading in the liturgy; (ii) model Masoretic codices, the purpose of which was to preserve the full biblical tradition, both the written tradition and the reading tradition; (iii) popular manuscripts that aided individuals in the reading of the text.

We describe here briefly some of the surviving model Tiberian Masoretic codices that have come to be regarded as among the most important and are referred to in various places in this book. All of these manuscripts originate from the Middle East, as do the vast majority of the early codices. The early eastern manuscripts began to come to the attention of scholars in the nineteenth century, mainly due to the collection of eastern manuscripts assembled by Abraham Firkovitch (1787–1874), the majority of which were donated to what is now the National

[21] For this type of medieval manuscript see Goshen-Gottstein (1962, 36–44), Díez Macho (1971, 22), Sirat (2002, 42–50), Stern (2017, 88–90), Arrant (2020) and Outhwaite (2020). These scholars use different terms to refer to such Bible manuscripts. Sirat, for example, refers to them as ‘common Bibles’, a term that is adopted by Outhwaite (2020).

Library of Russia in St. Petersburg. An important breakthrough was also the discovery of the Cairo Genizah in the late nineteenth century, which contained many fragments of early eastern Bible manuscripts, the majority of which are now in the possession of Cambridge University Library. The earliest surviving codices that were written in Europe are datable to the twelfth century (Beit-Arié et al. 1997). The early medieval model codices with standard Tiberian vocalization all reflect a basically uniform Masoretic tradition, though no two manuscripts are completely identical. The differences are sometimes the result of scribal errors and other times due to a slightly different reading tradition or system of marking vocalization and accents that is followed by the *naqdan*.

1. The Aleppo Codex (referred to henceforth as A)

In the colophon of this manuscript, it is stated that it was written by Shlomo ben Buyāʿā and the Masorete Aharon ben Asher (tenth century C.E.) added the vocalization, accents and Masoretic notes. This is confirmed by comparison with the statements concerning the traditions of Ben Asher and Ben Naftali in the Masoretic treatise known as 'The Book of Differences' (*Kitāb al-Khilaf*) of Mishaʾel ben ʿUzziʾel (§I.0.13.1.). The Aleppo Codex agrees with Ben Asher against Ben Naftali in 94% of the cases of differences between the two Masoretes recorded in this work. It is indeed thought to be the manuscript that Maimonides examined when he pronounced that Ben Asher's tradition was superior to that of other Masoretes. It should be regarded, therefore, as the authorized edition in Jewish tradition after the

time of Maimonides (Penkower 1981). When Maimonides saw the manuscript, it was kept in Egypt, possibly in the Ben-Ezra synagogue in Fusṭāṭ, which later became famous for its 'Genizah'. From the later Middle Ages, however, it was kept in Aleppo. In 1948 the synagogue in which it was kept in Aleppo was set on fire and only about three-quarters of the original manuscript were preserved. The surviving portions are now kept in Jerusalem in the library of the Ben-Zvi Institute (Shamosh 1987; Friedman 2012; Goshen-Gottstein 1960; Yeivin 1968). It has been published in a facsimile edition by Moshe Goshen-Gottstein (1976) and images are available online.[22] This manuscript forms the basis of a number of Israeli editions of the Hebrew Bible, including the *Hebrew University Bible* (Goshen-Gottstein 1975), the edition of Mordechai Breuer (Jerusalem 1977–1982, re-edited in 1996–1998 with inclusion of new information on the *parasha* divisions) and the modern Rabbinic Bible (*ha-Keter*) edited by Menachem Cohen (1992–).

2. Codex Leningradensis, St. Petersburg (Leningrad), National Library of Russia, I Firkovitch Evr. I B 19a (referred to henceforth as L).

This codex is still widely known as Codex Leningradensis. One of the colophons of the manuscript states that it was written in Fusṭāṭ, Egypt, and subsequently checked and corrected 'according to the most exact texts of Ben Asher'.[23] Its date is given in the colophon according to five different systems of reckoning,

[22] http://www.aleppocodex.org.

[23] לפי הספרים המדויקים של בן אשר.

which do not completely coincide, but a date in the region of 1008-1009 C.E. seems to be intended. It was, therefore, written after the close of the Masoretic period and was not the original work of a Masoretic authority, unlike the Aleppo Codex, which was vocalized by the Masorete Aharon ben Asher. It is, nevertheless, very similar to A and agrees with Ben Asher against Ben Naftali in 90% of the cases of differences between them that are recorded in the 'The Book of Differences'. The commissioner and first owner of the manuscript was a wealthy Karaite merchant known as Joseph ibn Yazdād.[24] The Codex Leningradensis differs slightly from the Aleppo Codex in a few minor details. There is a lesser degree of marking of *ḥaṭef* signs on non-guttural consonants than in A (§I.2.5.3.) and a slightly greater degree of marking of *gaʿya* on open syllables. Some of the original vocalization and accentuation has clearly been changed during the correction process referred to in the colophon and the corrections, in general, correspond to what is found in A. These consist of erasures, mainly of *gaʿya* signs, and additions, mainly of *ḥaṭef* signs under non-guttural consonants. The manuscript has been preserved in its entirety and it contains the complete text of the Bible. Paul Kahle made this the basis of the third edition of *Biblia Hebraica* (Stuttgart 1929–1937) and it has been used for all subsequent editions. For practical reasons, unless otherwise indicated, manuscript L is cited according to the edition in the fourth edition of *Biblia Hebraica* (*Biblia Hebraica Stuttgartensia*, abbreviated as

[24] For the background of the manuscript and the interpretation of its colophon see Outhwaite (2018).

BHS). In places where there are problems with the reading reflected by BHS (see, e.g. §I.3.1.14.) the manuscript is cited directly. Manuscript L is also the basis of the edition of the Hebrew Bible by Aron Dotan (Tel-Aviv 1973, revised 2001).[25]

3. British Library, London, Or. 4445 (referred to henceforth as B)

This manuscript contains leaves from different periods. The ones of greatest interest for the study of the Tiberian Masoretic tradition are the oldest leaves, which constitute most of the Pentateuch. These are generally thought to have been written at the same period as A in the first half of the tenth century, or possibly slightly earlier. This older section agrees with Ben Asher against Ben Naftali in 80% of the recorded cases of differences. It marks *ḥaṭef* signs on non-guttural consonants slightly more frequently than in the corresponding portions of L, in accordance the principles found in A. The marking of *gaʿya* in open syllables is, however, less frequent than in A. The *rafe* sign, furthermore, is used on non-בגדכפת consonants less often than in A (§I.3.2.). It appears, therefore, to represent a slightly less developed tradition than A.[26]

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[25] A facsimile edition of the manuscript was published by Loewinger (1970).

[26] Yeivin (1968, 359–60), Ginsburg (1897, 469–74), Lyons (1983), Dotan (1993).

4. The Cairo Codex of the Prophets (referred to henceforth as C)

This manuscript, which contains all of the books of the Prophets, was preserved down to modern times in the Karaite synagogue in Cairo. It has a colophon attributing it to the Masorete Moshe ben Asher, the father of Aharon ben Asher, with the date 895 C.E. There is now a consensus that the manuscript was written later, most likely in the eleventh century, and this is a later copy of an earlier colophon.[27] The manuscript reflects a tradition that is closer to that of Ben Naftali than to that of Ben Asher. In places where a difference is recorded between Ben Asher and Ben Naftali, it agrees with Ben Asher in 33% of cases and with Ben Naftali in 64% of cases. C also reflects some features of vocalization that are attributed to Ben Naftali in the Masoretic sources. These include forms such as לִישְׂרָאֵל instead of לְיִשְׂרָאֵל, the latter being the tradition of Ben Asher, which is found in A and L (§I.2.5.1.). Another case is the marking of *dagesh* in the *qof* of the verb יַעְקֹּב 'he supplants' (Jer. 9.3) (§I.3.1.11.2.). It does not, however, correspond to the tradition attributed to Ben Naftali in all features. In general, it exhibits a more developed tradition than A and L. It marks, for example, *gaʿya* in open syllables (§I.2.8.2.1) and *dagesh* in consonantal *ʾalef* (§I.1.1.) more frequently than is the case in A and L.[28] A facsimile of C was published by Loewinger (1971). A Spanish team directed by Pérez Castro (1979–

[27] For the arguments regarding its dating, see Menachem Cohen (1982b), Glatzer (1989, 250–59), Lipschütz (1964, 6–7).

[28] Yeivin (1968, 360–61).

1992) produced an edition of the manuscript together with its Masora.

5. Jerusalem National and University Library, Heb. 24, 5702 (formerly MS Sassoon 507) (henceforth referred to as S)

This is likely to have been written in the tenth century. The surviving sections contain most of the Pentateuch. It does not exhibit a predominant correspondence to either Ben Asher or Ben Naftali, in that it agrees with Ben Asher against Ben Naftali in 52% of the recorded cases of differences. The vocalization exhibits some features that are attributed to Ben Naftali, e.g. בִּישְׂרָאֵל (§I.2.5.1.). In some features it is more developed than A and L, such as the greater marking of *rafe* and the greater marking of *gaʿya* in open syllables. Unlike A and L, however, it does not mark *ḥaṭef* signs on non-guttural consonants.[29]

Towards the end of the Masoretic period in the second half of the tenth century and the eleventh century, many Karaite scholars became involved with the Tiberian Masoretic tradition. Some studies have shown that the Masoretic notes in some Tiberian Bible codices, including the Aleppo Codex, contain some elements that appear to reflect Karaite rather than Rabbanite theology.[30] Does this mean that the whole circle of Tiberian Masoretes were Karaites? There are several problems with such a simple assessment. The medieval sources refer to several

[29] Yeivin (1968, 361-362), Shashar (1983).

[30] For example, the gradual revelation of *miṣvot* to generations before Moses; cf. Zer (2003).

generations of Masoretes, some of them belonging to the same family. They indicate that the family of the famous Masorete Aharon Ben Asher had been involved in Masoretic activities over five generations. Aharon Ben Asher lived in the tenth century, and so Asher 'the elder', who is stated to be the great-great-grandfather of Aharon, is likely to have lived in the second half of the eighth century C.E., before the emergence of Karaism on the historical scene. There is no evidence of a Karaite community in Tiberias during the Masoretic period. The immigration of Karaites to Palestine evidently began in the second half of the ninth century and was directed towards Jerusalem (Gil 1992, 182). Some of the Masoretes, furthermore, were closely associated with the Rabbanite Jewish authorities, e.g. Pinḥas Rosh ha-Yeshiva ('head of the Academy'), who lived in the ninth century. The 'Academy' (*Yeshiva*) was the central body of Rabbanite Jewish communal authority in Palestine. Some close parallels to the format and phraseology of the Masoretic notes can, in fact, be found in Midrashic literature composed before the Islamic period (Martín Contreras 1999; 2002; 2003). It is likely that these Midrashim were redacted by Jewish sages in Tiberias, which was a thriving centre of Rabbinic scholarship in the Byzantine period (Rozenfeld 2010, 120–26). All this suggests that Karaite scholars joined forces with an existing stream of tradition of 'Bible scholarship' in Rabbanite Judaism, enhancing it and developing it.

The Karaites contributed to the Tiberian Masoretic tradition in various ways. They sponsored the safekeeping of the model Masoretic codices produced by the Masoretes. This is

shown by the fact that colophons of many of the surviving codices indicate that they had come into the possession of Karaite public institutions, such as study houses and synagogues. The Karaites also become involved in the production of accurate copies of Masoretic biblical codices, particularly in the eleventh century, after the cessation of the activities of the Tiberian Masoretes. In the late tenth and early eleventh century, they produced several Masoretic treatises (§I.0.13.1.) and developed the para-Masoretic philological activity of grammar (§I.0.13.4.).

Several of the colophons of the model Tiberian also indicate that the codices were used for liturgical reading by the Karaite communities on Sabbaths and festivals, e.g.

The Aleppo Codex (A):

> ‘in order that they bring it [the codex] out to the settlements and communities in the holy city on the three pilgrimage festivals, the festival of Passover, the festival of Weeks and the festival Tabernacles to read in it’.[31]

The Cairo Codex of the Prophets (C):

> ‘This is the codex, the Eight Prophets, which Yaʿbeṣ ben Shlomo consecrated in Jerusalem … for the Karaites who celebrate the feasts at seeing the moon, for them all to read on Sabbath days, at new moons and at the feasts’.[32]

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[31] Kahle (1930, 3): כדי שיוציאוהו אל המושבות והקהלות שבעיר הקודש בשלשה רגלים חג המצות חג השבועות וחג הסוכות לקרות בו.

[32] Kahle (1959, 93): זה הדפתר שמנה נביאים שהקדיש אותו יעבץ בן שלמה בירושלים ... לקראין העושים המועדים על ראות הירח יקראו בו כלם בשבתות ובחדשים ובמועדים.

II Firkovitch Evr. II B 34:

> 'This Bible should be taken to one of the settlements in which there are Karaite communities on Sabbaths and festivals in the city of Cairo so that the congregation can read it each Sabbath and blessed festival'.[33]

The use of Masoretic codices for liturgical reading distinguished the Karaites from the Rabbanites, who continued to use scrolls for this purpose (Allony 1979).

I.0.5. *QERE* AND *KETIV*

The medieval Tiberian Bible codices record the reading tradition not only in the vocalization sign system but also in marginal notes. These are known as *qere* notes. The term *qere* is the Aramaic passive participle קְרֵי 'read'. The notes were marked when there was a conflict between the orthography of the text, known as the *ketiv* (from the Aramaic passive participle כְּתִיב 'written'), and the oral reading. The usual practice in the manuscripts was to write the vocalization of the *qere* on the orthography of the *ketiv* and then write in the margin the appropriate orthography of the *qere* without vocalization. The *qere* note in the margin is generally flagged by the word קרי (*qere*) under it or the abbreviation ׄק, e.g.

2 Kings 20.4

L: הָעִ֥יר Margin: חצר
ׄק i.e. read the *ketiv* העיר as חָצֵר

[33] Kahle (1930, 74–77): יאסף זה המקרא אל אחת המושבות שיהיה בה קהלות הקראיין בשבתות ובמועדים במדינת מצרים לקראת הקהל בו בכל שבת ומועד ברוך.

In some places in the manuscripts, the *qere* note is accompanied by a sign that resembles a final *nun* ן. This was evidently a device to draw the attention of the reader (Ofer 2019, 89–91).

Qere notes are unevenly distributed across the Hebrew Bible. They are less frequent in the Pentateuch than in the Prophets and Writings.[34]

When there is a regular conflict between the orthography of the reading in frequently occurring words and forms, as is the case, for example, with the Tetragrammaton (*ketiv* יהוה, *qere* אֲדֹנָי or אֱלֹהִים), the place name 'Jerusalem' (*ketiv* ירושלם, *qere* יְרוּשָׁלַיִם) and some morphological suffixes (see below), the vocalization of the word reflects the *qere* but there are no *qere* notes in the margins with the appropriate orthography.

It is important to distinguish between the *qere* notes and the *qere*. The term *qere* should properly refer to the entire reading tradition, reflected by the vocalization, whereas the *qere* notes concern selected cases where the reading tradition differs sufficiently from the orthography to lead to errors in reading. Errors in reading included not only errors in pronunciation but also errors in the understanding and parsing of a word.

As remarked, the transmission of the Hebrew Bible involved the intertwining of written text and oral reading tradition. The written text was copied by scribes and the memory of the oral reading tradition was passed on from generation to generation by teachers. The scribes and the teachers constituted two distinct groups and their activities were distinct. This is one of the reasons why discrepancies arose between the two channels

[34] Barr (1981), Tov (2015, 157).

of transmission. To understand further the phenomenon of a reading tradition (*qere*) of the Hebrew Bible that does not always correspond to the orthography of the written text (*ketiv*), it is helpful to compare the *qere* to the oral reading traditions of the Qurʾān, known as *qirāʾāt*.

According to early Islamic sources, immediately after the death of the prophet Muḥammad, Qurʾānic verses were preserved in both written and oral form. They were recorded in writing on small fragmentary objects, such as palm stalks and thin stones, and were transmitted in human memory 'in the hearts of men' (*ṣudūr al-rijāl*).[35] The implication is that oral traditions accompanied written traditions from the very beginning of the process of transmission. After the written text of the Qurʾān had been officially stabilized and had undergone a process of standardization in the form of the edition of the caliph ʿUthmān (seventh century C.E.), considerable diversity still remained in the various traditions of orally reciting the text, despite the fact that ʿUthmān had commanded the written texts that did not conform to the new ʿUthmānic recension to be destroyed. These oral reading traditions exhibited different linguistic features, reflecting differences between the spoken Arabic dialects of the period, and also textual differences. Some of the differences were also due to grammatical errors by reciters. For approximately two centuries after the introduction of the ʿUthmānic standard written text, some textual differences in the reading traditions still deviated from the or-

[35] See *ḥadīth* 4986 in the collection of al-Bukhārī (*Ṣaḥiḥ al-Bukhārī*) ed. Muḥammad M. Khan (1997).

thography of this standard text. The textual differences, therefore, were not only different interpretations of the written orthography but also, it seems, different readings that arose in oral transmission. By the third century A.H./ninth century C.E., however, the permitted forms of reading were strictly brought into line with the orthography of the text and with standardized rules of Arabic grammar. This was largely due to the activities of Ibn Mujāhid (d. 324 A.H./936 C.E.), who had the official backing of the government authorities. Ibn Mujāhid also reduced the number of authorized reading traditions to seven canonical ones, which were transmitted from a recognized authority and had a large number of tradents. The principle of conformity with the orthography of the ʿUthmānic text did not necessarily require correspondence to the reading originally intended by the orthography, but rather it was required that the reading could be accommodated by the orthography. The potential for variation was increased by the fact that what was fixed was the orthography without diacritical dots on the Arabic letters (known as the *rasm*). This is likely to have been intentional in order to accommodate a diversity of reading traditions. The text, therefore, could not serve as a stand-alone document but rather functioned as an *aide-mémoire* for the oral reading (Graham and Kermani 2007, 116; Roxburgh 2008, 8). Various different dialectal forms of Arabic were permitted in the reading traditions, so long as they could be supported by the *rasm*. The orthography originally represented the western Arabian dialect of the Ḥijāz in which a glottal stop was elided. The word for ‘well, spring’, for example, was pronounced as *bīr* in the dialect of Ḥijāz (i.e. بير) and this is what

was originally intended by the orthography بير. This was how it was pronounced also in some of the canonical reading traditions. Other canonical reading traditions, however, read the *rasm* with a glottal stop, viz. *biʾr*, in accordance with the phonology of the eastern Arabian dialect (i.e. بئر). Some of the most widely followed canonical readings in later centuries, in fact, followed the eastern type of pronunciation, which deviated from what the orthography was originally intended to represent.[36]

The *qere* of the Hebrew Bible was most likely analogous to the Qurʾānic reading traditions, especially those of the early Islamic period, which sometimes differed textually from the orthography.[37] As with the Qurʾānic reading traditions, the *qere* reflects an orally transmitted reading tradition of the written text, i.e. a memorized tradition of oral recitation. It need not be assumed that it is derived from a variant written tradition that had its origin in written manuscripts.[38] Indeed allusions to Jewish education in the Second Temple Period refer to learning the Torah

[36] For a good overview of Qurʾānic reading traditions see Leemhuis (2017). See also Nasser (2013) and Graham and Kermani (2007).

[37] Cf. Crowther (2018), who draws analogies between the diversity of Qurʾānic oral reading traditions with the pluriformity of biblical texts from Qumran.

[38] We take the view here of scholars who have stressed the oral dimension of the text reflected by the vocalization; cf. especially Barr (1968, 194–222; 1981), Morag (1974), M. Breuer (1997) and Ofer (2019, 87–89). A discrepancy between a reading tradition and the written text similar to the one found in the transmission of the Hebrew Bible is found

by hearing the recitation of texts, which would be memorized and repeated orally. This acquired knowledge of the text would stand independently of the written text. Josephus (d. 100 C.E.) describes such a process of education as follows:

> Let the high priest stand upon a high desk, whence he may be heard, and let him read the laws to all the people; and let neither the women nor the children be hindered from hearing.[39]

Such memorized oral traditions could potentially survive punctuations such as the physical destruction of written texts, as is likely to have happened after the destruction of the First Temple in the sixth century B.C.E.[40] and as is reported to have happened during the reign of Antiochus IV Epiphanes, who, according to 1 Macc. 1.56-57, ordered the destruction of books in the Temple in 168–167 B.C.E. In a similar manner oral traditions of the Qurʾān maintained textual traditions that were eliminated by the physical destruction of written non-ʿUthmānic versions (Zbrzezny 2019).

The *qere* notes in the medieval Masoretic codices are unlikely to have originated as written marginal corrections of specific words in the written text, as advocated, for example, by scholars such as Ginsburg (1897, 183–87) and Gordis (1971).

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also in the tradition of reciting the Talmud in the Yemenite Jewish community; Morag (1988).

[39] *Antiquities* (4.214). The passage is discussed by Schniedewind (2013, 196). Josephus refers elsewhere also to the memorization of Psalms by the Levites (*Antiquities* 20.218).

[40] Cf. Carr (2005, 161–73).

Rather they constitute a system that was developed before the vocalization signs were created to alert the reader to places where the oral reading deviates from what is represented by the written orthography.

In the early Islamic tradition, the Qurʾān was typically recited only from memory during congregational prayers. In an attempt to bring the oral traditions more into line with the written text, Ḥajjāj ibn Yūsuf (d. 95 A.H./714 C.E.), the governor of Iraq, ordered the recitation to be made from a book rather from memory alone (Hamdan 2006, 172). Such an attempt to bring the recitation of oral tradition more closely together with the text is likely to have occurred also in Judaism in the process of fixing the text after the destruction of the Temple. The oral and written traditions of both the Hebrew Bible and the Qurʾān, nevertheless, continued to be separate levels of transmission. The oral reading was the oral performance of the written text, whereby the two levels were intertwined.

As is the case with Qurʾānic reading traditions, the *qere* reflected linguistic differences from the *ketiv*, textual differences and sporadic errors in reading.

The linguistic differences often appear to reflect dialectal divergences. The *qere* of the pronominal suffixes ךָ- [-χɔː], תָּ- [-tʰɔː] and יו- [-ɔːɔv], for instance, reflect different morphological forms from those reflected by the *ketiv*. The *ketiv* of the second person suffixes ך-, ת- reflect forms without a final vowel and the 3ms suffix יו- appears to reflect a suffix containing a front vowel, such as *-ēw* or the like. The forms of the *qere* are reflected in Qumran manuscripts and Hebrew epigraphic texts from the first

millennium B.C.E. by spellings such as כה-, תה- and ו- (Cross and Freedman 1952, 53, 66–67; Qimron 1986, 58–60). The spelling of these suffixes with the normal Masoretic type of orthography is also found in Qumran and epigraphic texts.[41] The *qere* of the suffixes ךָ-, תָּ- and ָיו-, moreover, is reflected by the orthography of the consonantal text in a few sporadic cases, e.g. יָֽדְכָ֫ה 'your hand' (Exod. 13.16), גַּ֣רְתָּה 'you have sojourned' (Gen. 21.23), חִצָּ֗ו 'his arrows' (Psa. 58.8). It is not necessarily the case, therefore, that the linguistic differences between the *qere* and the *ketiv* always reflect later stages of development of the Hebrew language, but rather in many cases these may have been contemporary dialectal differences. Exceptional pronominal forms that appear in the *ketiv* but not in the *qere* and have been considered archaic are often attested in the orthography of Qumran manuscripts. This applies, for example, to 2fs pronominal forms with final *yod*:

ketiv אתי, *qere* אַ֫תְּ 1 Kings 14.2 'you (fs)'

ketiv הלכתי, *qere* הָלָ֑כְתְּ Jer. 31.21 'you (fs) went'

ketiv לכי, *qere* לָ֑ךְ 2 Kings 4.2 'to you'

The *yod* occurs on these pronominal forms in Qumran manuscripts where they do not occur in the *ketiv* of the Masoretic Text, suggesting that it was still a living linguistic feature in the late Second Temple period. Examples are particularly numerous in the scroll 1QIsa[a], e.g.[42]

[41] For a detailed discusssion of the attested forms of the suffix see Hornkohl (2020).

[42] Material incorporated from the Gesenius grammar project contributed by Aaron Hornkohl.

אתי היאה (1QIsa[a] 42.24 | BHS אַתְּ־הִ֑יא Isa. 51.9 '[are] you [not] she')

לבכי (1QIsa[a] 39.26 | BHS לִבֵּ֑ךְ Isa. 47.7 'your [fs] heart')

עליתי (1QIsa[a] 17.4 | BHS עָלִ֖ית Isa. 22.1 'you [fs] have gone up')

In fact, the forms with *yod* occasionally occur in the *qere* of the Masoretic text, e.g. חַיָּ֑יְכִי 'your (fs) life' (Psa. 103.4).

There are other less frequently occurring instances where there appear to be differences in morphology between the form represented by the orthography of the *ketiv* and the *qere* without it being felt necessary to write a *qere* note, e.g.

Cant. 3.4. עַד־שֶׁ֤הֲבֵיאתִיו֙ 'until I had brought him'

Gen. 24.47. וָאָשִׂ֥ם 'and I placed'

Lev. 20.26. וָאַבְדִּ֥ל 'and I have separated'

Here the *ketiv* orthography is likely to reflect the forms הֲבִיאֹתִיו, וָאָשֵׂם and וָאַבְדֵּל respectively. Evidently, the orthography of the *ketiv* was considered to be acceptable as a representation of the *qere* due to analogy with orthography in other contexts, e.g. הָבֵ֖יא 'bring!' (1 Sam. 20.40), and defective spellings such as וְשָׁלִשִׁ֖ם 'officers' (Exod. 14.7).[43]

With regard to textual differences between the *qere* and the *ketiv*, sometimes there is a difference in the whole word, e.g. 2 Kings 20.4, written העיר 'the town', read חָצֵ֣ר 'the court' or the

[43] The linguistic differences between the *qere* and the *ketiv* are particularly prominent in Biblical Aramaic, where in many cases each of these layers clearly reflects different dialects of Aramaic.

division of words, e.g. Ezek. 42.9, written ומתחתה לשכות האלה, read מִתַּ֖חַת הַלְּשָׁכ֣וֹת הָאֵ֑לֶּה 'below these chambers'. In some isolated cases the discrepancy amounts to omissions or additions of words or phrases, e.g. Jer. 31.38, written הנה ימים, read הִנֵּ֥ה יָמִ֖ים בָּאִ֑ים 'behold the days are coming'.

In a few cases, a textual difference in the *qere* does not differ in its phonetic form from the reading offered by the *ketiv*. This applies, for example, to several instances where the *ketiv* is לו 'to him' and the *qere* is לֹא 'not' and vice versa, e.g.

> וְ֠קָם הַבַּ֨יִת אֲשֶׁר־בָּעִ֜יר אֲשֶׁר־לֹ֣א חֹמָ֗ה לַצְּמִיתֻ֛ת לַקֹּנֶ֥ה אֹת֖וֹ
>
> *qere:* אֲשֶׁר־ל֣וֹ חֹמָ֗ה
>
> 'The house that is in a city with a wall (*ketiv*: a city that is not a wall) shall be made sure in perpetuity to him who bought it' (Lev. 25.30).
>
> וְאָמַ֣ר ׀ ל֗וֹ כִּ֚י עַתָּ֣ה תִתֵּ֔ן
>
> *qere*: וְאָמַ֣ר ׀ לֹ֗א
>
> 'He would say "No, you must give it now"' (*ketiv:* 'He would say to him "You must give it now"' (1 Sam. 2.16).

In such cases, the conflict between the oral *qere* and the orthography of the *ketiv* is only a difference in its interpretation, which shows that the oral reading was transmitted together with an associated semantic content. So the note in the margins of medieval Masoretic manuscripts stating that the *qere* is לו where the *ketiv* has לא indicates that in the reading tradition this word *lō* has the meaning 'to it' and offers an orthography that is more appropriate for this than the orthography of the *ketiv* (לא), which

reflects a different meaning of *lō*, namely the meaning of the negative particle. In late antiquity, this semantic content was expressed by the Targums (Onqelos and Jonathan), which frequently reflect an interpretation of the *qere* and not the *ketiv* (e.g. Onqelos to Lev. 25.30: ביתא דבקרתא דליה שורא ‘a house that is in town that has a wall’). In a number of cases, however, the Targums reflect the semantic content reflected by the orthography of the *ketiv*. This applies, for example, to the Targum to 1 Sam. 2.16, which reflects the *ketiv* לו ‘to him’: ואמר ליה ‘and he said to him’. This reflects a diversity of interpretative traditions.

Another case where the *ketiv* and *qere* have the same phonetic form is 2 Sam 5.2: *ketiv* והמבי את, *qere* note המביא את ‘the one bringing in + object marker’ (וְהַֽמֵּבִ֖יא אֶת־). The *ketiv* seems to have arisen by haplography of an *ʾalef*. The *qere* note need not be taken as evidence that it has its origin in a written manuscript with the correct orthography, but rather indicates that in the reading tradition the *ketiv* המבי is interpreted as meaning המביא. The purpose of the note was to ensure that readers parsed the anomalous orthography המבי correctly. Similar cases of *qere* notes that do not reflect a different pronunciation but rather offer help in parsing words with an unusual orthography include Jer. 18.3 *ketiv* והנהו, *qere* note והנה הוא ‘and behold he’ (וְהִנֵּה־ה֛וּא) and Exod. 4.2 *ketiv* מזה, *qere* note מה זה ‘what is that?’ (מַה־זֶּ֣ה). In these last two cases, the orthography of the *ketiv* has the purpose of reflecting the prosodic bonding of the words. Although this prosodic bonding indeed exists also in the *qere*, the *qere* note was

considered necessary since such combinations of words are normally not represented in this way in the orthography.

Another case of the *qere* note apparently differing only in orthography from the *ketiv* is

> 1 Chron. 11.17. L: וַיִּתְאָ֫ו ‘and he desired’, *qere* note: ויתאיו, i.e. the *qere* is וַיִּתְאָ֫יו.

Here the spelling of the *qere* note with final יו (imitating the orthography of the 3ms pronominal suffix on plural nouns ◌ָיו-) is likely to be a device to ensure that the ending of the word is read as a final diphthong. Similar *qere* notes for this verb are found in Prov. 23.6 and Prov. 24.1. An analogous type of note is found in Jer. 17.11: *ketiv* ימו, *qere* ימיו ‘his days’ (יָמָ֫יו). The orthographies ויתאו and ימו would, in principle, be possible for the representation of a final diphthong consisting of *qameṣ* and consonantal *vav* [ɔːv]. The point is that the *vav* in orthographic sequences such as או- and מו- at the ends of words would normally be read in the biblical corpus as a vowel. The *qere* note warns against following the normal practice, which would result in an error of reading.

In a few cases, the *qere* has a *qameṣ ḥaṭuf* or *ḥaṭef qameṣ* where the *ketiv* has a vowel letter *vav*, e.g.

> Neh. 4.9. L: וַנָּ֫שָׁוּב ‘and we returned’, *qere* note: ונשב, i.e. the *qere* is וַנָּ֫שָׁב.

The purpose of the *qere* note is to supply a more appropriate orthography for the short vowel of the reading tradition since the orthography of the *ketiv* with *vav* could cause an error in reading.

In some cases falling into the category of those just discussed, in which the *qere* note presents a more frequent variation of orthography rather than the orthography of a completely different word, there is a Masoretic note relating to orthography rather than a *qere* note, which serves the same purpose, e.g.

Neh. 13.23. L: אַשְׁדֳּודִיּ֔וֹת עַמֳּונִיּ֑וֹת ‘Ashdodite, Ammonite women’, note יתיר ו (‘the *vav* is redundant’), i.e. the *qere* is אַשְׁדֳּדִיּ֔וֹת עַמֳּנִיּ֑וֹת.

In these types of cases the manuscripts occasionally differ, some having a *qere* note and others a Masoretic note relating to orthography (Ofer 2019, 92), e.g.

2 Sam. 16.8. תַּחְתָּ֔ו:

L: תחתיו קׄ ‘the *qere* is תַּחְתָּ֔יו’

A: דׄ חסׄ ‘one of four cases in which the orthography (of this suffix) lacks (*yod*)’

Notes such as those just described, in which the *qere* is pronounced the same or similarly to the *ketiv*, suggest that the *qere* notes were originally compiled before the creation of the vocalization signs, since the vocalization would have ensured that such an error of reading was not made. References to differences between *qere* and *ketiv* are, in fact, already mentioned in Rabbinic literature (Yeivin 1980, §105; Ofer 2008; 2009).

In a large proportion of cases where the *qere* differs from the *ketiv,* the *qere* represents an easier reading than the *ketiv.* The reading may be textually easier. The *qere*, for example,

sometimes has a *vav* where the *ketiv* has a *yod* that is textually difficult and has evidently arisen through scribal error, as in:

> Jer. 13.20. L: שְׂא֤י עֵינֵיכֶם֙ ‘lift up your (pl) eyes’ (where the *ketiv* reflects שְׂאִי ‘lift up (fs)’), *qere* note שאו, i.e. the *qere* is שְׂא֤וּ

In some places, the *qere* inverts the letters of a *ketiv* of an obscure form to produce a familiar form, e.g.

> 2 Sam. 20:14. L: וַיִּקָּלֲה֒וּ ‘and they assembled’, *qere* note ויקהלו, i.e. the *qere* is וַיִּקָּֽהֲל֒וּ.

In such cases in the Aleppo Codex the vocalization signs are not marked in the order required by the *qere* but rather are marked on the letters of the *ketiv* in a different order from the form of the *qere* that they are intended to represent, i.e. וַיִּקָּל֒הֲוּ (Yeivin 1962). Here each individual letter has the vocalization required by the *qere* but the sequence of vowels is still according to the order of the letters in the *ketiv*. This may reflect the notion that the *qere* here is correcting a mistaken orthography, which is scrambled in the *ketiv*.

The *qere* may be socially easier, in that it supplies a euphemism in place of a less socially polite *ketiv*, e.g.

> Deut. 28.30. L: יִשְׁגָּלֶ֒נָּה ‘he will ravish her’, *qere* note ישכבנה, i.e. the *qere* is יִשְׁכָּבֶ֒נָּה ‘he will lie with her’.

It may be theologically easier by, for example, supplying a substitution for the sacred Tetragrammaton or avoiding an anthropomorphism, as in

Deut. 16.16. L: שָׁל֣וֹשׁ פְּעָמִ֣ים ׀ בַּשָּׁנָ֡ה יֵרָאֶ֨ה כָל־זְכוּרְךָ֜ אֶת־פְּנֵ֣י ׀ יְהוָ֣ה אֱלֹהֶ֗יךָ ‘Three times a year all your males shall appear before the Lord, your God’.

Here the verb יֵרָאֶ֨ה is read as a *nifʿal,* but the *ketiv* יראה appears to have originally represented a transitive *qal* verb ‘he will see (the face of the Lord)’. The reading tradition was less anthropomorphic and so theologically more acceptable.

In a few cases, however, the *qere* contains textual differences that appear to be more difficult than that of the *ketiv* and have arisen by an error, e.g.

2 Sam. 16.12. L: בְּעֵונִ֑י, *qere* note בעיני, i.e. the *qere* is בְּעֵינִ֑י ‘upon my eye’.

The *ketiv* reflects the word עֲוֹנִי ‘my punishment’, and this would seem from the context to be the original reading here (C. McCarthy 1981, 81–83) and the reading ‘my eye’ has arisen by an erroneous reading of the word: אוּלַ֛י יִרְאֶ֥ה יְהוָ֖ה בְּעֵונִ֑י (קרי בעיני) וְהֵשִׁ֨יב יְהוָ֥ה לִי֙ טוֹבָ֔ה תַּ֥חַת קִלְלָת֖וֹ הַיּ֥וֹם הַזֶּֽה׃ ‘It may be that the Lord will look upon my punishment (*qere* my eye) and that the Lord will repay me with good for this cursing of me today.’ The Septuagint translates *ἐν τῇ ταπεινώσει μου* ‘in my humiliation’, which is clearly a rendering of the *ketiv*. The interpretation of Targum Jonathan, however, reflects the reading of the *qere*: מא אם גליא קדם יי דמעת עיני ‘what if the tear of my eye is revealed before the Lord?’. Another example is

Gen. 8.17. L: הַוְצֵ֣א ‘bring out’, *qere* note היצא, i.e. the *qere* is הַיְצֵ֣א.

The *qere* here is the morphologically difficult form הַֽיְצֵ֑א, whereas the *ketiv* reflects the expected form הוֹצֵא. Here again, the *qere* seems to have arisen by an erroneous reading of a *yod* instead of a *vav*. The letters *vav* and *yod* were often difficult to distinguish in the Hebrew square script used in the Second Temple Period (Tov 2012, 228–32).

Difficult *qere* readings such as בְּעֵינִי and הַֽיְצֵ֑א, which apparently arose from a confusion of written letters, do not necessarily originate in scribal errors in written texts but rather could have been due to misreadings of a written text in the oral recitation. This would imply that the oral reading tradition, although memorized and potentially independent of the written text, in practice had some degree of dependence on it. As remarked, it is best characterized as an oral performance of the visible written text. The tradition of this oral performance was evidently less fixed in antiquity and could adjust to the visible written text, even when this was misread. At a later period, the Tiberian reading tradition was fixed in its textual form, but it nevertheless continued to have the status of an oral performance of the written text and so have some degree of dependence on it. This is reflected, in particular, in the phenomenon of orthoepy in the Tiberian reading tradition, i.e. the effort to ensure that the distinct elements of the written text are given their optimal realization (§I.0.11.).

The intertwined nature of the oral reading tradition and the written text is reflected also in the interpretation exhibited by the early versions and by the interpretation traditions that existed during the first millennium C.E. when the Tiberian reading was still a living oral tradition. In the ancient versions, such as the

Septuagint, the Peshitta and the Vulgate, the renderings of passages with *qere* and *ketiv* differences in the Masoretic tradition in some cases reflect the Tiberian *qere* and in other cases reflect the *ketiv*.[44] Even Greek transcriptions of Hebrew proper names in the Septuagint in some cases reflect the *ketiv* rather than the *qere*.[45] It is possible that in the source text and source reading tradition of the Septuagint in the Second Temple Period the *qere* and *ketiv* variations were distributed differently from what came to be fixed in the Masoretic tradition. This is less likely, however, in later versions such as the Peshitta and Vulgate, and it appears that the translators were basing themselves on either the *qere* or the *ketiv*. In the Talmudic period, indeed, the Rabbis based their interpretations of Scripture on both the *qere* and the *ketiv*, and traces of this practice continued into the Middle Ages.[46]

I.0.6. The Accents

The *qere* became canonical and fixed. After the canonization of the *qere*, another level of oral reading was superimposed on the *qere* in the form of the divisions of the *qere* text expressed by cantillation. These divisions, which came to be represented graphically by the medieval accent signs, expressed a particular

[44] According to Gordis (1971, 66) the Peshitta and Vulgate versions reflect approximately 70% *qere* readings and the Septuagint approximately 60%.

[45] Myers (2019, 285–86).

[46] Goldberg (1990), Naeh (1992; 1993).

interpretation of the text.[47] Occasionally the accent divisions do not correspond to the tradition of the written text. This applies to some cases where there is a conflict between the accents and the paragraph divisions, known as *parashiyyot*, in the Tiberian Masoretic text. These paragraph divisions in the layout of the written text are found in the manuscripts from Qumran, both biblical and non-biblical. There is a large degree of agreement between the paragraphing of the Qumran biblical scrolls and that of the medieval manuscripts, which indicates that the tradition can be traced back to the Second Temple period. In a number of places, however, the paragraph divisions in the medieval manuscripts do not coincide with the end of a verse according to the accents. This is known as פסקה באמצע פסוק 'a paragraph division within a verse', e.g. Gen. 35.22, 1 Sam. 16.2. The reason for this appears to be that the paragraph division of the written text and the division expressed by the cantillation are two different layers of exegetical tradition, which occasionally do not correspond with one another. In a number of cases, the cantillation divisions conflicted with the *qere*, as is seen by the fact that in a number of verses a division in the *qere* represented by a pausal form in the vocalization has a conjunctive accent in the cantillation.[48]

[47] There is evidence that the written accent signs were introduced before the vocalization signs in the various traditions of notation of reading traditions (Dotan 1981).

[48] For this phenomenon see Revell (1980; 2015), I. Ben-David (1995) and Khan (2013a, 59–60). According to Dresher (1994) and DeCaen and Dresher (2020) this phenomenon is motivated by the system of prosodic division, which obliges conjunctives to be used in long verses in

The cantillation is a layer of reading that has roots in late antiquity. There are references to the teaching of biblical cantillation in Talmudic literature. One passage (Babylonian Talmud, *Berakhot* 62a) mentions the use of the right hand by the teacher or leader of the congregation to indicate the accents of the reading. The term פסקי טעמים ‘stops of the accents’, which is found in Talmudic literature, reflects the function of the accents to mark syntactic division. The association of the chant with the interpretation of the meaning of the text was recognized, as is shown by the Talmudic interpretation of Neh. 8.8 ‘[And they read from the book, from the law of God, clearly;] they gave the sense and (the people) understood the reading’ (וְשׂ֣וֹם שֶׂ֔כֶל וַיָּבִ֖ינוּ בַּמִּקְרָֽא), which is said to refer to the reading with accents.

Evidence for the division of the biblical text by accents in the Second Temple period is found in a Septuagint manuscript from the second century B.C.E. that has spaces corresponding to the major pausal accents of the Tiberian tradition (Revell 1971). In addition to the Tiberian accent signs, there was also a tradition of marking cantillation divisions by accents in manuscripts with Babylonian vocalization. Divisions of the Babylonian cantillation in most cases coincide with those of the Tiberian tradition (Shoshany 2003; 2013). This can be interpreted as reflecting that they had a common origin in antiquity.

There is evidence that in the Second Temple period the exegesis of the syntax of the biblical text did not always

some places where they are not expected. This would imply that the prosodic accent system was imposed on an earlier inherited reading tradition.

correspond to that of the Tiberian accents. This is seen in the Septuagint translation, which often reflects a different syntactic division of the verse. From the Pesher commentaries found in Qumran, moreover, it appears that the delimitation of biblical verses did not always correspond to the placement of the final pausal accent (*silluq*) in the Tiberian tradition. It should be taken into account, however, that, just as there was a large range of consonantal textual traditions at this period, it is likely that there were a variety of exegetical traditions regarding the syntax of the text.

This is seen in the case of Isa. 40.3. In the New Testament, 'the voice of one crying in the wilderness' of Matt. 3.3 reflects an interpretation that is different from the one reflected by the Tiberian accents. In the *Manual of Discipline* from Qumran (1QS 8.13-14), however, the introit 'a voice calls' is omitted and the teacher uses the verse to exhort the sectarians 'to prepare a way in the wilderness', i.e. establish a community there. This shows that the Masoretic interpretation of the syntax was also current at that period. The version found in Matt. 3.3 is apparently an exegetical reworking to support the call of John from the wilderness (Fishbane 1988, 367–68). Another case is Deut. 26.5. The interpretation in conformity with the accents 'An Aramaean was seeking to destroy my father' can be traced to the Second Temple period. Midrashic literature, however, indicates that there was also an ancient tradition of interpreting it 'My father is an Aramaean about to perish' (Goldschmidt 1960, 34ff.).[49] It is likely

[49] The Septuagint translation (*συρίαν ἀπέβαλεν ὁ πατήρ μου* 'my father abandoned Syria') seems to reflect a slightly different consonantal text.

that the exegetical tradition of the Masoretic accents has its origin in the teachings of mainstream Pharisaic Judaism. Within the accent system itself one can sometimes identify different layers of tradition. One example of this is the decalogue in Exod. 20.13-16. The accentuation of this passage is unusual in that most words have two different accents. The explanation of this double accentuation is apparently that it reflects two layers of tradition. According to one layer of tradition, the four commandments are presented in four separate verses, whereas in another they form together one accentual unit.[50]

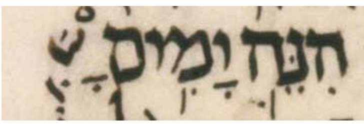
The Targums frequently reflect an interpretation of the text that corresponds to the divisions of the cantillation. In Deut. 26.5, for instance, the disjunctive accent on the first word of the clause אֲרַמִּי֙ אֹבֵ֣ד אָבִ֔י indicates that it is syntactically separated from the following word and so the two should be interpreted as subject and predicate rather than a noun and attributive adjective. The sense reflected by the accents, therefore, is ‘An Aramaean (i.e. Laban) was seeking to destroy my father’. This is a Midrashic interpretation, which is reflected by Targum Onqelos (לבן ארמאה בעא לאובדא ית אבא).

We may say, therefore, that three layers of textual tradition became fixed and canonized, one written, i.e. the *ketiv*, and two oral, i.e. the *qere* and the cantillation tradition. It is not known whether there was a difference in the historical depth of the two oral layers of tradition. The accents, however, clearly relate more closely to the *qere* than the *ketiv*. When, for example, the *qere*

[50] For the existence of different layers of accent systems see Menahem Cohen (1987).

contains words that are not written in the *ketiv,* these words have accents and, vice versa, words that are written but not read have no accents. When a word that occurs in the *qere* is omitted in the *ketiv,* some manuscripts write the accents, e.g. in Jer. 31.38, where the *ketiv* is הנה ימים and the *qere* is הִנֵּה יָמִים בָּאִים ‘behold the days are coming’, L writes the accents of the *qere* בָּאִים on a filler sign:

L:



This phenomenon of two oral traditions may be compared to the toleration of pluriformity in the oral reading traditions (*qirāʾāt*) of the Qurʾān. As we have seen above, attempts were made to restrain this pluriformity, but it was not eliminated altogether and a limited diversity of reading traditions were legitimated. The most direct analogy to the different Qurʾānic *qirāʾāt* is the existence of reading traditions that were distinct from the Tiberian one, namely the Babylonian, Palestinian and various non-standard Tiberian traditions. One could, however, also regard the existence of distinct oral layers within the Tiberian tradition as a manifestation of the legitimation of a pluriformity of reading traditions.

I.0.7. The Representation of the *Qere* in Written Form

As is well known, the Targums sometimes go beyond the oral reading reflected by the medieval Masoretic tradition and make further adjustments for purposes of exegesis or the resolution of perceived textual difficulties. One may regard them, therefore, as a further layer of tradition, refining the oral cantillated *qere*. It is of interest that some features of the oral *qere* and the adjustments of the Targums actually appear in the written text of some Qumran Hebrew Bible manuscripts.[51] This may be compared to the situation in the early years of the transmission of the Qurʾān. There are references to the existence of early codices of the Qurʾān that deviated from the ʿUthmānic text. Some of the readings attributed to these codices that differed from the ʿUthmānic text survived as oral reading traditions after the ʿUthmānic recension had become the standard written form of the text.[52] Even in some medieval manuscripts of the Hebrew Bible, the reading of the *qere* was written in the text in place of the reading of the *ketiv*. These were predominantly manuscripts written for private use. Such manuscripts, which are mainly preserved in the Genizah in fragmentary form, often deviate from the traditional Masoretic tradition in other respects. Many, for

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[51] For the reflection of the *qere* in the *ketiv* of 1QIsa[a] from Qumran see Kutscher (1979, 519–21). The correspondences between the adjustments of the Targum and the *ketiv* of Qumran manuscripts have been discussed by Gottlieb (2016).

[52] See Leemhuis (2017).

example, exhibit features of Non-Standard Tiberian vocalization or lack accents. An extreme case of such private medieval manuscripts is a corpus of Hebrew Bible manuscripts written by Karaite scribes in Arabic transcription (§I.0.13.3.). These regularly represent the *qere* in the transcription rather than the *ketiv*. By contrast, monumental manuscripts, which were typically deposited in public institutions, preserved the traditional distinction between the *ketiv* and the *qere*.

Biblical manuscripts with Palestinian vocalization, which in general should be considered to be private texts, frequently have the *qere* form written in place of the *ketiv* (Revell 1977, 164–65). Manuscripts with Babylonian vocalization, most of which can be assumed to have been written in Iraq, correspond to the Tiberian consonantal text very closely and differ only in a few details. These differences are generally related to orthography and include, in some cases, the harmonization of the *ketiv* with the *qere*. Such small divergences between the 'Easterners' (*Madinḥaʾe*) and the 'Westerners' (*Maʿarbaʾe*) are mentioned in the Tiberian Masoretic notes and also in lists appended to Tiberian manuscripts.

I.0.8. THE HISTORICAL DEPTH OF THE TIBERIAN READING TRADITION

There are a number of indications that the Tiberian reading tradition, i.e. the *qere* of the Tiberian Masoretic Text, which came to be represented by the Tiberian vocalization sign system, had its roots in the Second Temple Period.

As has been remarked, the textual differences between the reading and the written text are referred to in Rabbinic literature. Furthermore, some of the Qumran scrolls from the Second Temple period have in a number of places the text of the Tiberian *qere*.[53] One may trace back the text of *qere* forms even further, into the period of literary growth of the biblical books. There is internal evidence for this in the distribution of *qere* and *ketiv* within the Masoretic text. This is found, for example, in the fact that the *ketiv* of the text of Chronicles often corresponds to the *qere* of its earlier biblical source. An example of this is the word מִגְרָשֶׁיהָ ‘surrounding pasture-lands’, which is used in association with the lists of Levitical cities in Josh. 21 and 1 Chron. 6. The Chronicler is clearly using the text of Josh. 21 as his literary source. In the original text in Joshua, the word is always written as a singular form but it is read in the reading tradition as a plural: מִגְרָשֶׁהָ. This reflects a later interpretation of an originally singular form as a plural (Barr 1984). This ‘later’ interpretation, however, is no later than the consonantal text of Chronicles, where it is written as a plural. Even if we do not attribute this interpretation to the author of the Chronicles passage, there are good grounds for arguing that the text of the reading tradition of Josh. 21 is as old as the consonantal text of 1 Chron. 6.[54]

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[53] This is found particularly in ‘popular’ texts such as 1QIsa^{a}; cf. Kutscher (1979, 519–21).

[54] For the antiquity of the reading tradition see the discussion in Barr (1968, 207–22) and Grabbe (1977, 179–97). Maimon Cohen (2007) argues that the *qere* variants listed in the Masoretic notes are linguistic

In Late Biblical Hebrew, certain verbs with a reflexive or non-agentive meaning appear as *nifʿal* in the past suffix conjugation form (perfect) whereas they appear as *qal* in Classical Biblical Hebrew. The intransitive form of the verb 'to stumble' (כשל), for example, appears in the *nifʿal* נִכְשַׁל in the book of Daniel (וְנִכְשַׁ֖ל 'and he will stumble' Dan. 11.19) but in the *qal* form כָּשַׁל elsewhere. In the prefix conjugation (imperfect), however, the verb is vocalized as a *nifʿal* throughout the Bible. This is because the *ketiv* of the prefix conjugation (יכשל) is ambiguous as to the verbal conjugation and could, in principle, be read as *qal* or *nifʿal*. The Tiberian reading tradition treats the verbal forms as *nifʿal* where this would be compatible with the consonantal text, but the occurrence of the *qal* form in the suffix conjugation in Classical Biblical Hebrew suggests that the verb was originally read as *qal* in all forms. This is clearly the case in the infinitive form of this verb וּבִכָּשְׁל֗וֹ (Prov. 24.17), where the consonant text lacks the initial *he* of the *nifʿal* (הִכָּשֵׁל) and so must have represented the *qal,* but it is nevertheless read as a *nifʿal*. The crucial point is that the replacement of the *qal* by the *nifʿal* is reflected by the consonantal text itself in Late Biblical Hebrew in the book of Daniel. In some cases, the evidence for the development of an original *qal* verb into a *nifʿal* form that is independent of the vocalization is found in the Qumran manuscripts from the Second Temple period many centuries before the creation of the vocalization sign system. This applies, for example, to the verb נגש 'to approach'. On account of the assimilation of the initial *nun* in this

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variants that date back to the time of the composition of the biblical books.

verb when in contact with the following consonant, the orthography of the prefix conjugation can only be read as *qal* (יִגַּשׁ), since a *nifʿal* reading would require the insertion of a *nun* in the consonantal text (יִנָּגֵשׁ). The orthography of the suffix conjugation form (נגש), however, could be read as either *qal* or *nifʿal,* and it is the *nifʿal* reading that was adopted in the reading tradition (נִגַּשׁ). In the Qumran text 4Q512 (40–41, 2) the infinitive of this verb appears in the form בהנגשו, which is unambiguously a *nifʿal* (בְּהִנָּגְשׁוֹ) (Ariel 2013, 947). Similar distinctions between the suffix conjugation and prefix conjugation of passive forms are found, whereby the former is vocalized as *puʿal* whereas the latter is vocalized as *nifʿal* (e.g. טֹרַף 'was torn apart' vs. יִטָּרֵף). Furthermore, the vocalization interprets certain verbs as *piʿel*, which are likely to have been originally *qal*. The verb גרשׁ 'to drive out', for example, is normally vocalized as *piʿel* in the prefix and suffix conjugations (תְּגָרֵשׁ, גֵּרְשָׁה), in which the orthography is ambiguous between a *qal* or *piʿel* reading. In the participles, however, where the orthography of *qal* and *piʿel* would be distinct, the original *qal* is preserved (גֹּרֵשׁ, גְּרוּשָׁה). The shifts of *puʿal* to *nifʿal* and *qal* to *piʿel* are developments that are attested in Post-biblical Hebrew already in Second Temple sources.[55]

Another case of correspondence of the *ketiv* of late books with that of the *qere* of earlier books is the word 'Jerusalem'. The

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[55] For these issues relating to the vocalization of verbal forms see Ginsberg (1934), Ben-Ḥayyim (1958, 237), Qimron (1986) and Fassberg (2001). For further re-interpretations of the Masoretic orthography in the Samaritan reading tradition see Ben-Ḥayyim (2000, 338–339) and Schorch (2004).

regular *ketiv* or this word in the earlier books is ירושלם, whereas the *qere* is יְרוּשָׁלַם [jaʀ̟uːʃɔːˈlaːjim] with the final syllable broken by a glide. In some of the late books, there are a few examples of the *ketiv* of this work spelt with a *yod* before the final *mem*, e.g. מִירוּשָׁלַיִם (Esther 2.6).

External evidence for the antiquity of the *qere* includes the fact that in many cases where there is a semantic difference between the *qere* and the *ketiv*, the meaning of the *qere* is reflected by the Greek Septuagint. A clear example of this is the exegetical alteration in the reading tradition whereby an original expression of 'seeing the face of God' is changed into the theologically more acceptable 'appearing before God' by reading the verb as a *nifʿal* rather than as a *qal*, e.g. Deut. 16.16 שָׁל֣וֹשׁ פְּעָמִ֣ים ׀ בַּשָּׁנָ֡ה יֵרָאֶ֨ה כָל־זְכוּרְךָ֜ אֶת־פְּנֵ֣י ׀ יְהוָ֣ה אֱלֹהֶ֗יךָ 'Three times a year all your males shall appear before the Lord, your God'. This change is clear where the verb is an infinitive and it lacks the expected initial *he* of the *nifʿal* form in the consonantal text, e.g. Exod. 34.24 בַּעֲלֹֽתְךָ֗ לֵרָאוֹת֙ אֶת־פְּנֵי֙ יְהוָ֣ה אֱלֹהֶ֔יךָ 'When you go up to appear before the Lord, your God'. This change in the reading tradition is reflected not only in the Targums but also already in the Septuagint (C. McCarthy 1981, 197–202), the Pentateuch section of which is normally dated to the third century B.C.E.

One example that demonstrates the conservative nature of the phonology of the Tiberian reading is the pronunciation of the *pe* in the word אַפַּדְנ֔וֹ 'his palace' (Dan. 11.45). According to medieval sources, this was pronounced as an emphatic unaspirated stop, whereas the letter *pe* with *dagesh* in all other places in the reading tradition was pronounced as an aspirated

stop, i.e. a stop followed by a short flow of air before the onset of the voicing for the ensuing vowel (§I.1.17.). The hard pronunciation of the *pe* is also mentioned by Jerome, who states that it is the only 'Latin' *p* in the entire Bible (*p* in Latin was regularly pronounced as an unaspirated stop).[56] The hard pronunciation is also reflected by the Greek transcription Απαδανω by the Church father Theodoretus (fifth century CE). Here the Hebrew letter is with Greek *pi*, which, like Latin *p*, was pronounced as unaspirated [p].[57] The word is in origin a loan from Old Persian. The unaspirated pronunciation of the *pe*, which is uncharacteristic of Hebrew, evidently preserves a feature that existed in the pronunciation of the source language.[58] The fact that this feature, which conflicted with normal Hebrew pronunciation, should have been preserved from the original

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[56] Notandum autem quod cum pe littera hebraeus sermo non habeat, sed pro ipsa utatur phe cuius uim graecum φ sonat—in isto tantum loco apud Hebraeos scribatur quidem phe sed legatur pe. 'But it should be noted that while Hebrew speech does not have the letter *pe* (i.e., Latin *p* [p]), but instead of it uses *phe*, the force of which is approximated by the sound of Greek φ (i.e., [ph])—in that particular place (i.e., Dan. 11.45) among the Hebrews *phe* (i.e., פ [ph]) indeed is written but it is read as *pe* (i.e., Latin *p* [p])'. Translation by Ben Kantor. Cf. Sutcliffe (1948, 124–25).

[57] Some Greek transcriptions represent the Hebrew *pe* with Greek *phi* (i.e. aspirated [p^h]), e.g. εφαδανω (Theodotion, second century C.E.), εφαδανω / αφαδανω (Polychronios, fifth century C.E.). These could be interpreted as reflecting variant reading traditions. The Greek data were supplied by Ben Kantor.

[58] Steiner (1993).

period of composition right down to the period of the Masoretes, centuries after contact of the transmitters of the tradition with the source language had ceased, demonstrates great conservatism in the Tiberian reading tradition.

Another relevant issue in this context is the pronunciation of the letter ש, which is read in the Tiberian reading tradition in two ways, distinguished in the vocalization by points, namely either as [ʃ] (*shin*) or as [s] (*sin*), the latter being equivalent to the sound of the letter ס (*samekh*). It is clear that the reading tradition of ש differed from the original pronunciation of the letter in the pre-exilic period when Hebrew was first committed to writing, otherwise the letter ס would regularly appear in the orthography where the reading tradition pronounces the sound [s].[59] It is noteworthy, however, that roots and words that were

[59] This orthographic phenomenon can be interpreted in two ways. The pre-exilic ש may have been pronounced as a single sound, presumably [ʃ], in all contexts. Possible evidence for this is the fact that in the Samaritan reading tradition the letter is always pronounced [ʃ], including where the Tiberian tradition has *sin*. This feature of the Samaritan reading tradition may have its roots in a type of pronunciation that existed side by side with the Tiberian type in the Second Temple Period. Alternatively, the letter ש in the pre-exilic orthography may have been intended to represent two sounds, which, according to this interpretation, are normally thought to have been [ʃ] and a lateral sibilant resembling the lateral *s* [ɬ] of Modern South Arabian languages. In the Second Temple Period the lateral sibilant would have shifted to [s]. It should be taken into account, furthermore, that both of these alternative types of pronunciation of ש may have existed in the pre-exilic period. The necessity to use a single letter to

regularly spelt with *sin* in pre-exilic books are occasionally spelt interchangeably with *sin* and *samekh* in later books, e.g.

Ezra 4.5: וְסֹכְרִ֥ים 'and they hire' vs. 2 Chron. 24.12 שֹׂכְרִ֔ים

The letters *sin* and *samekh* occasionally interchange in proper names in the late books, e.g.

Ezra 4.11: אַרְתַּחְשַׁ֣שְׂתְּא 'Artaxerxes' vs. Ezra 7.1 אַרְתַּחְשַׁ֣סְתְּא

Such cases of interchange between the written letters *sin* and *samekh* are sporadic and most likely unintentional deviations from the standard orthography that reflect the interference of contemporary pronunciation.

In Rabbinic literature, the *qere* of *sin* is sometimes referred to as *samekh* and its *ketiv* as *shin.*[60] In these sources, the reading (*qere*) of the letter *sin* is identified with that of *samekh.* Interchanges of orthography such as וְסֹכְרִ֥ים and שֹׂכְרִ֔ים, therefore, constitute another case of the *qere* being datable to the Second Temple Period by orthographic variations internal to the consonantal text.

In some manuscripts with Palestinian and Babylonian vocalization, the letter *sin* is distinguished from *shin* by writing over *sin* a miniature ס (*samekh*) and over *shin* a miniature ש (*shin*) (Revell 1970a, 87; Kahle 1902, 11). In some manuscripts with Palestinian vocalization written in abbreviated form (known as

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represent two sounds arose from the fact the alphabet used to write Hebrew was in origin the one that was developed to represent Phoenician, in which the two sibilant sounds in question were not distinguished.

[60] Steiner (1996).

serugin) a letter *samekh* is written in place of *sin* (Revell 1977, 66).

There is some evidence that the placement of *samekh* over the letter ש as a diacritical sign for *sin* was an ancient practice with roots in the period in which the *ketiv* was being stabilized, i.e. the Second Temple period. One persuasive case is the variant spellings of the following proper name in the books of Nehemiah and Ezra:

> Neh. 7.52. L: נְפֽוּשְׁסִֽים, *qere* note: נפישסים, i.e. the *qere* is נְפִֽישְׁסִֽים.
>
> Ezra 2.50. L: נְפִיסִֽים, *qere* note נפוסים, i.e. the *qere* is נְפוּסִֽים.

If we leave aside the difference between the *ketiv* and the *qere* regarding the medial vowel in this name, the spelling with the added *shin* in Neh. 7.52 נְפֽוּשְׁסִֽים could be explained as the result of the fact that the spelling was originally נפוש֯ים with a superscribed *samekh* over the ש to indicate that it should be read as *sin*. The *samekh* was subsequently incorporated into the line of the text by scribal error.[61] The reading of the first letter of the sequence שס as *shin* is likely to have been a later orthoepic measure to ensure that the two letters were read distinctly (§I.0.11.). The form נְפִיסִֽים in Ezra 2.50 with *samekh* is presumably an orthographic variant of the original form נפישים with *sin*. If this is the correct explanation, then this is further evidence for the equivalence of *samekh* and *sin* at an early period.

It should be pointed out that in *qere* notes in the medieval manuscripts a *sin* of the *ketiv* is spelt ש and not ס, e.g.

[61] Cf. Honeyman (1944).

Ezra 4.23. L: אַרְתַּחְשַׁ֣שְׂתְּא, *qere* note: ששׂת, i.e. the *qere* is אַרְתַּחְשַׁ֣שְׂתְּ.

Ezra 10.37: L: וְיַֽעֲשָׂו, *qere* note: ויעשׂי, i.e. the *qere* is וְיַֽעֲשָׂי.

Ezra 10.44. L: נָשְׂאֻ֤י, *qere* note: נשאו, i.e. the *qere* is נָשְׂאֻ֤ו.

In such cases, the focus of the *qere* note is not on the *sin* but rather on other letters in the *ketiv*. It may be for this reason that it has not been replaced by *samekh* in the note. Moreover, the purpose of the *qere* notes was to supply an appropriate orthography of the *qere*. Within the norms of the biblical orthography, שׂ was an appropriate orthography of [s] and so there was no need to alter it.

Another indicator that the roots of the Tiberian reading tradition were in the Second Temple period is its close relationship with the Babylonian reading tradition, which is reflected by manuscripts with Babylonian vocalization. This close relationship between two branches of tradition transmitted in different geographical locations is most easily explained through the comparative method of historical linguistics as the result of a common genetic connection in a single location at an earlier period. The most obvious place of origin would be Second Temple Palestine. Just as the written text of both the Babylonian tradition and the Tiberian tradition has its origins in a proto-Masoretic text of the Second Temple Period,[62] it is likely that there was a proto-Masoretic reading tradition, which likewise split into an eastern and western branch. This proto-Masoretic

[62] For the phenomenon of the proto-Masoretic text-type in the Second Temple sources see Tov (2012).

reading tradition was clearly distinct from the Samaritan reading tradition, which itself exhibits some features that can be correlated with Second Temple sources, such as the long pronominal forms (*attimma, -kimma*).[63]

As remarked, there is evidence of great conservatism in some elements of the Tiberian reading tradition, such as the *pe* of אַפַּדְנוֹ (Dan. 11.45), but a comparison of the Tiberian and Babylonian branches of the biblical reading tradition shows that in some features the Babylonian reading appears to be more linguistically conservative. This is shown by the fact the Babylonian tradition sometimes has parallels with earlier sources that are lacking in the Tiberian tradition. For example, the preservation of an */a/* vowel in unstressed closed syllables that is found in the transcriptions of the Septuagint, Origen and Jerome is a feature of Babylonian pronunciation, whereas this vowel is more widely attenuated to */i/* in the Tiberian tradition, e.g. Septuagint *Μαβσαρ* 'Mabsar' (Tiberian: מִבְצָ֑ר, 1 Chron. 1.53),[64] Origen's Hexapla *λαμαλαμα* 'for the battle' (Tiberian: לַמִּלְחָמָ֑ה Psa. 18.40),[65] Jerome: *macne* 'cattle' (Tiberian: מִקְנֶה),[66] Babylonian מׅבצׅר [mavˈsˤɑːr].[67] Babylonian corresponds to Origen and Jerome and also to some Qumran texts in preserving the unstressed */o/* vowel

[63] Morag (1971), Ben-Ḥayyim (2000).

[64] Sperber (1937, 191).

[65] Brønno (1943, 387).

[66] Siegfried (1884, 50), Sperber (1937, 192).

[67] Yeivin (1985, para. 41.46).

in prefix conjugation verbs where it is reduced to *shewa* in Tiberian, e.g. תטבלנ̇י [tiṭboˈleːniː] (Job 9.31, Tiberian: תִּטְבְּלֵ֑נִי ‘you will plunge me’);[68] cf. Origen ιεφφολου (= יִפְּל֑וּ Psa. 18.39),[69] Jerome *iezbuleni* ‘he will honour me’ (Tiberian: יִזְבְּלֵ֣נִי Gen. 30.20),[70] and the frequent occurrence of *vav* in the Qumran manuscripts after the second radical of prefix conjugation verbs where Tiberian has *shewa*, e.g. יקטולו, אקטולה, יקטולהו.[71]

Some features of the Tiberian reading that differ from Babylonian may have developed under the influence of the vernacular Aramaic of the Jews of Palestine. It is not clear whether this applies to the aforementioned features, but we can identify a possible case of influence in the pronunciation of consonantal *vav*. We know from medieval sources that in the Tiberian reading tradition of Biblical Hebrew the default pronunciation of this letter was a labio-dental [v] (§I.1.6.). In Jewish Palestinian Aramaic, *vav* appears to have had the same labio-dental pronunciation. This is shown by the interchange of *vav* and fricative *bet* in Jewish Palestinian Aramaic texts and Rabbinic Hebrew of sources of Palestinian provenance. The fact that fricative *bet* in these texts also sometimes shifts to *pe* due to devoicing shows that it must have

[68] Yeivin (1985, para. 16.36).

[69] Janssens (1982, 92).

[70] Siegfried (1884, 48), Sperber (1937, 158).

[71] Qimron (1986, 50; 2018, 195-196), Reymond (2014, 209–21). For the parallels between these Qumran forms and the medieval Babylonian tradition see Yeivin (1972).

been labio-dental and this implies that *vav* also was labio-dental.[72] There is also evidence of the pronunciation of *vav* as a labio-dental in Mishnaic Hebrew, in that *vav* in some words corresponds to *bet* in Biblical Hebrew and *vav* and *bet* interchange in the orthography of some manuscripts, e.g.

נִוְּלָהּ 'he has disfigured her' (*Soṭah* 1.7); cf. Biblical Hebrew נב״ל (M. H. Segal 1927, 34–35)

אֲוָזִים ~ אֲבָזִים 'geese' (Bar-Asher 2015, 61-62)

The shift in the pronunciation of *vav* to a labio-dental in Aramaic and Hebrew in late antique Palestine is likely to be due to convergence with a shift of [w] to [v] in Greek at this period (Kantor and Khan forthcoming).[73]

The Babylonian tradition itself appears to have undergone some change due to the influence of the local vernacular, which resulted in a number of features that differed from Tiberian due to their being innovative rather than conservative. One such feature that is characteristic of the Babylonian pronunciation tradition is the shift of *ḥolem* to *ṣere*, which is reflected in the vocalized

[72] A. Ben-David (1960, 255), Kutscher (1976, 16–17), Sokoloff (1968, 30), Epstein (1964, 1223–26). This pronunciation of *vav* can also be reconstructed in the Samaritan tradition of Hebrew (Ben-Ḥayyim 2000, 33).

[73] Possible evidence for the embryonic merging of *vav* and fricative *bet* in Palestine is found already in some Qumran manuscripts, see Qimron (2018, 122) (I am grateful to Noam Mizrahi for drawing my attention to this).

manuscripts by an interchange of these two vowels.[74] The Karaite scholar al-Qirqisānī writing in the tenth century C.E. attributes this feature to influence from the language of the 'Nabaṭ', i.e. the Aramaic speaking population of Iraq.[75] The fronting of back vowels is still a feature of modern vernacular Iranian dialects in western Iran, including those spoken by Jews (Borjian 2012, 9, §D14).

One aspect of Tiberian vocalization that several scholars have identified as an indicator of the antiquity of the reading tradition is the apparent historical layering of variant types of vocalization of words with the same orthography across different Biblical books. These are differences in vocalization between words in late biblical books and corresponding words in earlier biblical books. In such cases, the vocalization found in the later books often corresponds to a type of vocalization that is characteristic of Rabbinic Hebrew or Aramaic, i.e. languages associated with the language situation in the Second Temple Period rather than the pre-exilic period. In two cases in Chronicles, for example, the *nifʿal* of the verb ילד is vocalized in an unusual way, with *shureq* rather than *ḥolem* and *dagesh* in the middle radical: נוּלְּדוּ 'they were born' (1 Chron. 3.5, 20.8). This morphological feature is not found in the vocalization of the earlier books but is found in some traditions of Rabbinic Hebrew.[76] The vocalization of these forms apparently reflects a dialectal form of morphology

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[74] Yeivin (1985, para. 11.6).

[75] Cf. al-Qirqisānī (*Kitāb al-ʾAnwār w-al-Marāqib*, ed. Nemoy 1939, vol. 2: 140).

[76] Cf. Yalon (1964, 152–57) and the references cited in Morag (1974, 310).

that was current in the time of the Chronicler. By implication, the vocalization of the earlier books must reflect a different, presumably slightly earlier tradition (Morag 1974). A further example is the difference in vocalization between אֻמְלַ֫ל 'feeble' (Psa. 6.3) and הָאֲמֵלָלִ֫ים 'the feeble' (Neh. 3.34). The vocalization הָאֲמֵלָלִ֫ים in the late biblical book reflects the one that is used in Rabbinic sources (Boyarin 1988, 63–64). The dual of the noun קֶרֶן is vocalized קַרְנַ֫יִם in Hab. 3.4, with the normal pattern of the dual, but קְרָנַיִם in Dan. 8 (verses 3, 6, 20), with the pattern of the stem of plural nouns, as is found in early vocalized manuscripts of the Mishnah (Kister 1992, 47, n.9; 1998, 246, n.9). The form עֲרָבִי 'Arab(ian)' occurs in pre-exilic sources, whereas the word has the vocalization עַרְבִי, corresponding to that of Aramaic, in post-exilic sources (Nehemiah and Chronicles) (Steiner 2016, 313). There is a difference in vocalization between הַיְלוּדִ֫ים (1 Chron. 14.4) and הַיִּלֹּדִ֫ים in the parallel passage in 2 Sam 5.14. The word חבל in the phrase חֲבֹ֫ל חָבַ֫לְנוּ 'we have acted corruptly' (Neh. 1.7) is vocalized with the vocalic pattern of an infinitive construct in a context where the vocalic pattern of an infinitive absolute may have been expected in earlier books. In Dan. 11.20 the construct of the noun הָדָר 'glory' is vocalized הֶ֣דֶר, rather than הֲדַר, which is the vocalic pattern of the construct in earlier books.[77]

Such differences in vocalization across pre-exilic and post-exilic books constitute strong evidence for the argument that

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[77] These last three cases are noted by Jan Joosten, paper delivered at the conference *The exegetical value of the Masora: Pointing and accentuation in historical perspective* (Oxford, 7-8 November, 2016).

there is historical layering in the reading tradition reflected by the medieval vocalization. The variant types of morphophonology in the late books, which often correspond in form to Rabbinic Hebrew or Aramaic, would have become incorporated into the reading tradition of the late books at some point in the Second Temple Period, whereas the variants found in the earlier books must reflect an earlier stage in the development of the biblical reading tradition. Crucially the later types of morphophonology were not extended to the reading tradition of the earlier books.

I would like to explore in greater detail the last point, i.e. the fact that the late morphophonology in the forms in question was not applied uniformly across the reading of all books. We have, in fact, already seen some counterexamples to this phenomenon. Attention was drawn above to the phenomenon whereby innovations in verbal patterns that are characteristic of the Second Temple Period (i.e. shifts of intransitive *qal* to *nifʿal* and transitive *qal* to *piʿel*) were extended to the vocalism of the earlier books. There are also cases of exegetical harmonization whereby the vocalism of words in late books is extended to parallel phrases in earlier books that have an orthography reflecting a different meaning. An example of this is the word מִגְרָשֶׁיהָ ‘surrounding pasture-lands’ in 1 Chron. 6. As remarked, the Chronicler is clearly using as his literary source the text of Josh. 21, in which the word is written as a singular form but it is read in the reading tradition as a plural: מִגְרָשֶׁהָ. This reflects a later interpretation of an originally singular form as a plural. This ‘later’ interpretation is reflected also by the consonantal text of

Chronicles, where it is written as a plural. The later interpretation has been extended to the reading tradition of the earlier book.

It should be taken into account that there are a number of other variations in Tiberian vocalization within the biblical corpus that cannot easily be correlated with chronological layering.[78] These include, for example:

(1) Variations in the use of *dagesh* in the same lexeme such as יִסֹּ֖ב 'let it go round' (1 Sam 5.8) vs. יָסֹ֥ב 'it goes round' (1 Kings 7.15); חֲבֻרָת֖וֹ 'his wound' (Isa. 53.5) vs. חַבֻּרָתִֽי 'my wound' (Gen. 4.23)

(2) Variations in *ḥaṭef* vowels in the same lexeme, such as יַחְשֹׁ֔בוּ 'they consider' (Isa. 13:17) vs. יַחֲשֹׁבֽוּן 'they conceive' (Psa. 35:20)

(3) Variation between *ḥireq* and *segol* in the same lexeme, as in וְהִגְלָ֣ה 'and he carried into exile' (2 Kings 24.14) vs. הֶגְלָ֖ה 'he carried into exile' (Jer. 52.28), or at least in the same morpheme, as in וְאֶכָּבֵד֙ 'and I will be honoured' (Isa. 49.5) vs. אִדָּרֵ֥שׁ 'I will be asked' (Ezek. 36.37).

(4) Variations between *qibbuṣ* and short *qameṣ* as the reflex of a historical short **u* in the same lexeme or in similar contexts, e.g. גֻּדְלֽוֹ (Psa. 150.2) vs. גָּדְל֔וֹ 'his greatness' (Deut. 11.2).

(5) Occasionally a *ḥaṭef qameṣ* occurs in a prefix conjugation verb (imperfect) before a pronominal suffix or a cohortative suffix rather than the normal vocalization with *shewa*

[78] Several of these were noted by Nöldeke (1912).

in such contexts. This reflects the lack of complete reduction of the vowel that occurs after the second radical in forms without suffixes, e.g. אֶשְׁתֳּלֶ֫נּוּ 'I will plant it (m)' (Ezek. 17.23), וָֽאֶשְׁקֳולָ֣ה 'and I weighed' (Ezra 8.25), אֲלַקֳטָה־נָּ֑א 'let me glean' (Ruth 2.7).

(6) Variations between *ṣere* and *pataḥ* in the stem of *piʿel* verbal forms, e.g. גִּדֵּ֑ל '[who] has brought up?' (Isa. 49.21) vs. גִּדַּ֣ל 'he made great' (Josh. 4.14).

(7) Variations between *ḥireq* and *ṣere* before gutturals in *piʿel* verbs, e.g. נִאֵ֣ר (Lam. 2.7, 'he has spurned') vs. מֵאֵ֣ן 'he has refused' (Num. 22.13).

The key question is whether the types of variation in Tiberian vocalization discussed above, diachronic and synchronic, have any semantic or exegetical significance.

Some morphophonemic variations are exploited to express distinctions in meaning in various reading traditions of the Hebrew Bible. There are many examples of this in the Samaritan tradition of reading. Typically the pairs of variant patterns of a word in the Samaritan tradition consist of one member that is conservative and another member that is innovative by a process of analogy or assimilation to an Aramaic form, or two members that are originally morphophonemic alternants that have now become distinct in meaning.[79] Many of these distinctions are between different grammatical categories of lexical items.

[79] See in particular Florentin (1996) for examples of this phenomenon.

Internal differences in vocalism have developed, for example, between *wayyiqṭol* past forms and *yiqṭol* non-past forms, e.g.[80]

> wtå̄́råd 'and she went down' (Tiberian וַתֵּ֫רֶד), by analogy with the pattern qå̄́ṭål vs. téråd 'she goes down' (non-past, Tiberian תֵּ֫רֵד, תֵּ֫רַד)

A morphophonemic distinction is made in the Samaritan tradition between verbal and nominal participles, e.g.

> *q-w-m* 'to rise': qāʾəm (verbal, based on Aramaic) vs. qam (nominal)

> *nifʿal* form: niqqå̄ṭål (past verbal, by analogy with imperfect *yiqqå̄ṭəl*) vs. niqṭål (nominal)

There are a number of cases of variants of a single lexeme with and without gemination of one of the consonants to express distinctions in meaning, e.g.

> å̄då̄ni 'Lord' (divine) vs. å̄danni 'master' (human)[81]

> å̄:sīdå 'the stork' (animal) (Tiberian הַחֲסִידָ֫ה Lev. 11.19) vs. assidåk 'your pious one' (human) (Tiberian חֲסִידֶ֑ךָ Deut. 33.8)[82]

> yamən 'Yamin' (proper name) (Tiberian יָמִ֫ין Gen. 46.10) vs. yammən 'right hand' (Tiberian יָמִין).[83]

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[80] The transcription system of Ben-Ḥayyim and Florentin is adopted here.

[81] Ben-Ḥayyim (1957a-77, vol. 4, 8-9, vol. 5, 194; 2000, 260).

[82] Florentin (1996, 231).

[83] Florentin (1996, 234).

wyå̄båd 'and he perished (past)' (< **ya*ʾ*abad*, Tiberian וַיֹּאבַד) vs. yå̄bbåd 'he perishes (non-past)' (< **ya*ʾ*bad* with assimilation of the /ʾ/ to the /b/, Tiberian יֹאבַד), i.e. a pair of alternants such as Tiberian יַחְשֹׁבוּ (Isa. 13:17) vs. יַחֲשֹׁבוּן (Psa. 35:20) has come to express a difference in meaning.[84]

ʿā:rəm 'the cities' (Tiberian הֶעָרִים) vs. ʿarrəm 'cities' (Tiberian עָרִים)[85]

wå̄må 'and the cubit' (Tiberian וְהָאַמָּה) vs. wåmmå 'and a cubit' (Tiberian וּאַמָּה)[86]

Most of the cases of synchronic variation listed in (1)–(7) above do not appear to have semantic or exegetical significance. Many of these types of variation in the Tiberian vocalization are not found, or only very marginally found, in the Babylonian tradition of vocalization, i.e. the other descendant of what I propose to identify as the proto-Masoretic reading tradition. This is either because the Babylonian tradition is more conservative of the proto-Masoretic reading of the particular feature in question whereas the Tiberian variation is a later development or the Babylonian tradition has levelled variation that has been preserved by the Tiberian tradition. In the list of features (1)–(7)

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[84] Florentin (1996, 218). This particular minimal pair is not attested in the Samaritan Pentateuch, but it can be inferred from the contrasting patterns used for the attested forms of the past and non-past, e.g. wyå̄bā̊du וַיֹּאבְדוּ 'and they perished' (Num. 16:33) vs. tå̄bbåd תֹּאבַד 'it becomes lost' (Deut. 22:3).

[85] Ben-Ḥayyim (2000, 92).

[86] Ben-Ḥayyim (2000, 92).

above the Babylonian tradition lacks variation in features (3)–(7). In features (3)–(5) it is more conservative and in features (6)-(7) it has levelled earlier variation. These are presented as (3a)–(7a) below:

(3a) וְהִגְלָ֣ה 'and he carried into exile' (2 Kings 24.14): הגלה [hiʁˈlɔː][87]

הֶגְלָ֣ה 'he carried into exile' (Jer. 52.28): הגלה [hiʁˈlɔː][88]

וְאֶכָּבֵד֙ 'and I will be honoured' (Isa. 49.5): ואכבד [wʔikkɔːˈvaːð][89]

אִדָּרֵ֥שׁ 'I will be asked' (Ezek. 36.37): אדרש [ʔiddɔːˈraːʃ][90]

(4a) The Babylonian reading tradition normally preserves a historical short **u* where in Tiberian it shifts to short /ɔ/ (*qameṣ*), e.g.

גָּדְל֑וֹ 'his greatness' (Deut. 11.2): גדלו [guðˈloː][91]

חָכְמָ֣ה 'wisdom' (Jer. 49.7): חכמה [ħuχˈmɔː][92]

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[87] Yeivin (1985, 302). The transcriptions of the examples with Babylonian vocalization are in some cases approximations, since there is uncertainty regarding the precise realization of some of the phonetic segments in the Babylonian pronunciation.

[88] Yeivin (1985, 144).

[89] Yeivin (1985, 505).

[90] Yeivin (1985, 505).

[91] Yeivin (1985, §37.12).

[92] Yeivin (1985, §37.18).

הָשְׁלַ֣כְתִּי 'I was cast' (Psa. 22.11): הֻשלכ֫תי [huʃˈlaːχtʰiː][93]

(5a) In the Babylonian reading tradition, it is the norm for the vowel of the prefix conjugation verbal stem to be preserved before suffixes,[94] e.g.

אֶזְכְּרֶ֣נּוּ 'I will remember him' (Jer. 31.20): אזכר֫נו [ʔizkoˈraːnuː]

תִּטְבְּלֵ֑נִי 'you will plunge me' (Job 9.31): תטבל֫ני [tiṭboˈleːniː]

וְנִדְרְשָׁ֥ה 'and we will inquire' (2 Chron. 18.6): ונדרש֫ה [wniðroˈʃɔː]

אֶזְכְּרָ֣ה 'I will remember' (Psa. 77.4): אזכר֫ה [ʔizkoˈrɔː]

(6a) In the Babylonian reading tradition it is the norm for the vowel of the final syllable of the 3ms *piʿel* to be *pataḥ*,[95] e.g.

גִּדֵּ֔ל Isa. 49.21 'he brought up' OB גד֫ל [ʁidˈdaːl]

בִקֵּ֥שׁ Isa. 1.12 'he asked' OB בק֫ש [viqˈqaːʃ]

(7a) The Babylonian vocalization reflects a tradition in which it is the norm for the vowel to be *ṣere* before a guttural in the *piʿel*,[96] e.g.

וְכִ֣חֶשׁ 'it will deny' (Job 8.18): וכח֫ש [wχeːˈħaːʃ]

וְכִהֵ֥ן 'and he will serve as a priest' (Exod. 40.13): וכה֫ן [wχeːˈhaːn]

[93] Yeivin (1985, §24.1).

[94] Yeivin (1985, §16.36, §16.45).

[95] Yeivin (1985, §20.01).

[96] Yeivin (1985, §20.06).

וּבִעֵ֖ר ‘and it will graze’ (Exod. 22.4): ובֿעֿ֖ר [wveːˈʕaːr]

נִאֵ֣ר ‘he has spurned’ (Lam. 2.7): נֿאֿ֣ר [neːˈʔaːr]

נִ֘אֵ֥ץ ‘he renounced’ (Psa. 10.3): נֿאֿ֥ץ [neːˈʔaːsˤ]

It is unlikely, therefore, that synchronic variations such as those listed in (3)–(7) had any semantic or exegetical significance in the proto-Masoretic reading tradition, since they are either a later development in the Tiberian tradition without clear semantic significance or were early features but were eliminated in the Babylonian tradition. They were simply cases of internal morphophonemic variation that is common across languages.

The variations in the use of *dagesh* in the same lexeme in the specific examples cited under (1) above do not appear to have any semantic or exegetical significance. It should be noted, however, that several examples of *dagesh* distinguishing the meaning of doublets of the same lexeme or homophonous words can be found in the Tiberian tradition and this has been developed further in the Babylonian tradition. There are, for example, a number of homophonous pairs of words in the Tiberian tradition that are distinguished by *dagesh*. These include cases such אֲבִיר ‘powerful’ referring to God, used in the construct state in phrases such as אֲבִיר יַעֲקֹב ‘the Mighty One of Jacob’ (Gen. 49.24, Isa. 49.26, Isa. 60.16, Psa. 132.2, 5) vs. אַבִּיר ‘powerful’ used to refer to humans (for further details see §I.3.1.3.).

With regard to pairs of forms from the same lexeme exhibiting a variation between a *ḥaṭef* vowel and silent *shewa* (as in יַחְשֹׁבוּ vs. יַחֲשֹׁבְוּן), in many such cases there appears to be a metrical motivation for the variation, which will be discussed in

§I.2.5.4. We have seen, however, that in the Samaritan tradition such a variation has been exploited to distinguish meaning in pairs such as wyå̄båd 'and he perished (past)' (< *yaʾabad*) vs. yå̄bbåd 'he perishes (non-past)' (< *yaʾbad*). There is, indeed, one isolated example of the exploitation of such variation to express a semantic distinction in the Tiberian tradition, namely the difference in vocalization between the verb יַעְקֹ֫ב 'he supplants' (Jer. 9.3) and the proper name יַעֲקֹב.

Returning now to the list of variant vocalizations from the late books, we should examine whether these had any semantic or exegetical significance. I should like to argue that there are indeed grounds for hypothesizing that many of the examples of such variations were motivated by an attempt to express a semantic distinction. It is relevant to note that these distinctions appear also in biblical manuscripts with Babylonian vocalization,[97] so they must be attributed to the proto-Masoretic reading tradition. Some examples of semantic distinctions are as follows:

אֻמְלַל vs. הָאֲמֵלָלִ֑ים (Neh. 3.34)

All cases of אֻמְלַל and its inflections are predicative, most with clear verbal inflection. הָאֲמֵלָלִ֑ים is the only nominal form with nominal inflection (functioning as an attributive adjective): וּפֹרְשֵׂ֧י מִכְמֹ֛רֶת עַל־פְּנֵי־מַ֖יִם אֻמְלָֽלוּ 'and those who spread a net upon the water will languish' (Isa. 19.8), אֻמְלַ֫ל אָ֥נִי 'I am languishing' (Psa. 6.3), vs. הַיְּהוּדִ֣ים הָאֲמֵלָלִ֑ים 'the feeble Jews' (Neh. 3:34). This distinction in vocalism can be compared to the development of a

[97] Examples of such forms that are attested in the manuscripts can be found in Yeivin (1985, 608, 843, 956, 1050).

distinction in vocalism between verbal and nominal participles in the Samaritan tradition.

נוֹלְדוּ vs. נוֹלַד/נוֹלָד

Here again, the formal distinction appears to reflect a distinction between verbal and nominal categories. The form נוֹלְדוּ is the only inflection of the *nifʿal* of ילד that has transparent verbal inflection in the biblical corpus: וְאֵ֥לֶּה נוּלְּדוּ־ל֖וֹ בִּירוּשָׁלָ֑יִם 'and these were born to him in Jerusalem' (1 Chron. 3.5). Other attestations of the *nifʿal* of this verb are either in the singular form נוֹלָד, which is explicitly adjectival, or נוֹלַד with *pataḥ* but often used impersonally without agreement with a plural subject, so both may have been interpreted as adjectival, e.g. הִנֵּה־בֵ֞ן נוֹלָ֣ד לְבֵית־דָּוִ֗ד 'behold a son is born' (1 Kings 13.2), וְאֵ֣לֶּה הָי֔וּ בְּנֵ֥י דָוִ֖יד אֲשֶׁ֣ר נֽוֹלַד־ל֑וֹ בְּחֶבְר֔וֹן 'These are the sons of David that were born to him in Hebron' (1 Chron. 3.1).

יָלוּד vs. יִלּוֹד

There may be a distinction also here between nominal and verbal participles. Targum Jonathan to וְאֵ֛לֶּה שְׁמ֥וֹת הַיִּלֹּדִ֖ים ל֑וֹ בִּירוּשָׁלָ֑ם (2 Sam 5.14) clearly interprets יִלּוֹד as a verbal participle: וְאִלֵּין שְׁמָהָת דְּאִתְיְלִידוּ לֵיהּ בִּירוּשְׁלַם 'These are the names of the ones who were born to him in Jerusalem'. The form יָלוּד is clearly used as a noun in some contexts, e.g. הַיָּל֣וּד הַחַ֔י 'the living child' (noun) (1 Kings 3:26); cf. Targum Jonathan: רָבְיָא חַיָּיא. Targum Jonathan to וְאֵ֙לֶּה֙ שְׁמ֣וֹת הַיְלוּדִ֔ים אֲשֶׁ֥ר הָיוּ־ל֖וֹ בִּירוּשָׁלָ֑ם (1 Chron. 14.4), the parallel to 2 Sam 5.14, is ואליין שמהת דאתילידו דהוון מתרביין בירושלם 'and these are the names of the ones who were born who were being

raised/were adolescents in Jerusalem'. This Targumic rendering of 1 Chron. 14.4 seems to reflect a nominal interpretation of the participle, presumably motivated by the added relative modifier phrase אֲשֶׁר הָיוּ, which would typically take a nominal antecedent.

הֲדַר vs. הֶדֶר

The two forms of these apparently synonymous construct forms in the biblical corpus express a distinction between 'divine glory' (הֲדַר) and 'human glory' (הֶדֶר), e.g. הֲדַר מַלְכוּתוֹ 'the glory of His kingdom' (God's glory) (Psa. 145.12) vs. הֶדֶר מַלְכוּת 'glory of the kingdom (human glory)' (Dan. 11.20). As we have seen above, the practice of using gemination to express semantic distinction is often applied to separate the usage of the same lexeme in divine and human contexts, e.g. אֲבִיר (divine) vs. אַבִּיר (human) and examples cited above from the Samaritan and Babylonian traditions.

עֲרָבִי vs. עַרְבִי

There is a distinction in meaning here between 'desert nomad' (עֲרָבִי) and 'a gentilic term of an ethnic group' (עַרְבִי): וְלֹא־יַהֵל שָׁם עֲרָבִי 'and no desert nomad/Arab will pitch his tent there' (Isa. 13.20) vs. וְגֶשֶׁם הָעַרְבִי 'Geshem the Arab' (Neh. 2.19). One may compare this to the formal distinction in Arabic between *ʾaʿrābī* 'nomad of the desert' vs. *ʿarabī* 'Arab, Arabian' (ethnic term)'.

קְרָנַיִם vs. קַרְנַיִם

The dual form קְרָנַיִם in Daniel chapter 8, which has a characteristically Rabbinic type of vocalization, has the meaning 'horns'.

The form קְרָנַ֫יִם in Hab. 3.4, which has the normal dual vocalic pattern, has the meaning 'rays (of light)'. This is the only other place where the word occurs in the biblical corpus as a common noun without a suffix or not in construct. The difference in vocalization, therefore, is likely to express a distinction in meaning between the two forms.[98]

חָבֹל vs. חֲבֹל

The infinitive absolute form חָבֹל immediately preceding the cognate verb occurs in Exod. 22.25 as an internal object with the meaning of 'taking in pledge': אִם־חָבֹ֥ל תַּחְבֹּ֖ל שַׂלְמַ֣ת רֵעֶ֑ךָ 'If ever you take your neighbour's garment in pledge' (Exod. 22.25). Here the infinitive absolute is an inner object of the verb. It is connected to the verb by a conjunctive accent, which is typical for infinitive absolute internal objects; cf. שׁ֣וֹב אָשׁ֤וּב literally: 'I shall return a returning' (Gen. 18.10). The construction חֲבֹ֖ל חָבַ֣לְנוּ לָ֑ךְ (Neh. 1.7) differs prosodically from חָבֹ֥ל תַּחְבֹּ֖ל (Exod. 22.25) in that the initial form חֲבֹ֖ל is separated from what follows by a disjunctive accent. The word חֲבֹ֖ל differs from חָבֹ֥ל semantically, in that it is from a different, albeit homophonous, lexical root. Finally it differs from it syntactically according to the interpretation reflected by the early versions, which treat it as an adverbial noun rather than an inner object: LXX *διαλύσει διελύσαμεν* 'we have broken with a breaking [covenant]', Vulgate: *vanitate seducti sumus* 'we have been seduced by vanity', rather than nominative active participles, which are the common translation technique of Greek and

[98] See the remarks of Yeivin (1985, 844, n.74).

Latin for inner objects, e.g. קָנוֹ אֶקְנֶה : LXX *κτώμενος κτήσομαι* ‘buying I shall buy’ (2 Sam 24.24).

We may summarize the hypothesis developed above regarding the formation of the reading tradition as follows. The variations in vocalization in the late biblical books are very likely to have had their origin in the language situation of the Second Temple Period. The proto-Masoretic reading tradition of the late books was fixed in the Second Temple Period and the distinctive late forms of vocalization discussed above are likely to reflect features of contemporary vernacular speech. At the time when the proto-Masoretic reading was fixed for the late books, a reading tradition was already in existence for the earlier books. During the Second Temple period, some of the innovative features of the reading of the late books were extended to the earlier books (e.g. the reading of intransitive *qal* verbs as *nifʿal* and the transitive *qal* as *piʿel*). Some of the innovative features of the later period, however, were not retroverted into the reading of the same lexemes in the earlier books, but rather the corresponding earlier forms were retained. One factor, perhaps the key factor, that motivated this retention of some of these distinct forms in the reading of the biblical corpus was the desire to distinguish different aspects of meaning or the distinction between homophonous lexemes. There were other cases of variation across the proto-Masoretic reading tradition as a whole, some most likely the result of synchronic language variation. Some of these variations were exploited to distinguish meaning (in particular, gemination). A large proportion of the synchronic

variation, however, did not have any semantic or exegetical significance. Some of this type of variation that survived in the Tiberian tradition was eliminated by levelling in the Babylonian tradition. Moreover, some new variation with no semantic significance developed in the Tiberian and Babylonian reading traditions after the two branches split from the proto-Masoretic tradition. The use of gemination to distinguish meaning within lexemes and between homophonous lexemes was extended further after the Tiberian and Babylonian branches had divided, especially in the Babylonian branch (§I.3.1.3.).

The exploitation of diachronic or synchronic morphophonemic variation to express distinctions in meaning was a form of inner-biblical exegesis. It should be pointed out, however, that similar processes occur in living spoken languages.[99] One phenomenon that is directly analogous to the issue of diachronic variants discussed here is the phenomenon of doublets, which are found in many languages by a process of retaining older forms alongside new forms of the same lexeme with different meanings. An example from Neo-Aramaic is as follows. In the North-Eastern Neo-Aramaic dialects, a historical **ġ* develops into /ʾ/ or zero /∅/. So in the Barwar dialect[100] **šaġəš* 'to trouble; to dandle (a child)' developed into *ša∅əš*, which is pronounced *šayəš* with a glide. The new form *šayəš* means specifically 'to dandle, to rock (a child)'. The old form *šaġəš*, however, is retained in the dialect with the meaning of 'to trouble'. This is a strategy for reducing

[99] I have described some cases from Neo-Aramaic dialects in Khan (2018a).

[100] Khan (2008, 51–52, 207).

ambiguity in the meaning of a lexeme. Such a development is directly analogous to the hypothesized process described above whereby older forms were retained alongside new forms in the biblical reading tradition during the Second Temple as a strategy to reduce ambiguity and elucidate meaning in the biblical corpus.

I.0.9. The Prestige of the Tiberian Tradition

Despite the fact that there are indications that the Tiberian pronunciation tradition had undergone linguistic change in the course of its transmission since splitting from the proto-Masoretic reading, in the Middle Ages the Tiberian reading tradition was regarded as the most prestigious and authoritative. The medieval sources justify this by the claim that the transmitters of the Tiberian tradition were able to preserve the original reading more accurately since they never left Palestine, unlike the diaspora communities.[101] In reality, as we have seen, the Tiberian reading did undergo change and was, in many cases, less conservative than the Babylonian tradition. It is likely that the authoritativeness of the Tiberian tradition had its roots primarily in its association with the Palestinian *Yeshiva* 'Academy', the central body of Jewish communal authority in Palestine, which was based in Tiberias from late antiquity until the Middle Ages.

After the Bar-Kochba revolt in the second century C.E., rabbinic leadership moved to the Galilee. Rabbi Joḥanan (d. 279 C.E.) established an academy in Tiberias. Subsequently, the

[101] Cf. the passages from al-Qirqisānī discussed in Khan (1990c) and the introduction of the long version of the Masoretic treatise *Hidāyat al-Qāriʾ* (§II.L.0.3. in the edition in this volume).

Jewish patriarch (*nasī*) relocated from Sepphoris to Tiberias, which transformed Tiberias into the Jewish capital of Palestine. A large number of Jewish sages who were active in Palestine in the Talmudic period studied in Tiberias. The Palestinian Talmud and most of the Aggadic Midrashim were redacted in the city (Rozenfeld 2010, 120–26). After the Islamic conquest of the city in 636, it became the capital of the administrative district known as Jund al-Urdunn. The city flourished between the eighth and tenth centuries, as is witnessed by archaeological records of its urban expansion, incorporating the neighbouring town of Hammat (Avni 2014, 72–78). During the ninth and tenth centuries, Tiberias was a thriving centre also of Muslim scholarship (Gil 1992, 329–30).

The association of the Masoretes with the Palestinian *Yeshiva* is reflected by the fact some of the Masoretes had direct connections to this academy. One of the known Masoretes was indeed the 'head of the Academy', namely Pinḥas Rosh ha-Yeshiva ('head of the Academy'), who lived in the ninth century. We also know of a certain ʾAḥiyyahu ha-Kohen he-Ḥaver, whose epithet *ḥaver* indicates that he was a 'member of the Academy'.[102]

[102] See the *Treatise on the Shewa* edited by Levy (1936, 9), the document published by Mann (1969, 2:43–44) and Gil (1992, 179). The passage in the *Treatise on the Shewa* refers to the Tiberian pronunciation as a tradition that was received from 'the men of the Great Assembly' (אנשי כנסת הגדולה), which was the supreme legislative body in Palestine during the Second Temple Period.

The medieval sources describe how teachers from Tiberias would travel to various communities of the diaspora to give instruction in the Tiberian reading and how people from the diaspora communities would travel to Tiberias. We read, for example, in the introduction of the long version of the Masoretic treatise *Hidāyat al-Qāriʾ*:[103]

> ‘The people in the communities of the exile would press any teacher who travelled (from Tiberias) to these distant lands to teach their children the reading of the Land of Israel and eagerly imbibed that from him, making him sit down so that they could assiduously learn it from him. Whoever came from the exile to the Land of Israel had a desire for the teaching of the reading of the Land of Israel that was equally ardent as that of those absent [i.e. those just mentioned who received teachers in diaspora lands] and for abstaining from his own (tradition of reading)’.

Similarly, we read in a medieval Karaite commentary on Genesis in a passage concerning Gen. 49.21:

> The fact that he compared Naftali to ‘a hind let loose’ (אַיָּלָ֣ה שְׁלֻחָ֑ה, Gen. 49.21) is on account of what he foresaw by the help of prophecy, namely that he would be beautiful of voice, excellent in reading, excellent in speaking Hebrew. This is because from the inheritance of Naftali teachers and masters will go forth, such as Ben Asher and Ben Naftali. The Jews of the world follow the reading of these two teachers. This is the reading of Palestine, which has been disseminated throughout the corners of the world. The teachers of it have gone forth to the land of Iraq and other

[103] Edition in vol. 2 of this book, §II.L.0.4.

> places. They have taught people and written many copies (of manuscripts). He compared it (the inheritance of Naftali) here to a 'hind let loose', which is beloved and brought up in dwellings that bring ease to the heart, just as is the case with the teachers who were sent from the inheritance of Naftali to the lands of the exile to teach people the reading of Palestine. For that reason, he said 'a hind let loose'. … The superbly beautiful reading has its origin in the inheritance of Naftali, namely the town of Tiberias, which is uniquely renowned for this. For this reason, he said 'which gives words of beauty' (הַנֹּתֵ֖ן אִמְרֵי־שָֽׁפֶר, Gen. 49.21), since the reading (of Tiberias) is the original one.[104]

The prestige and authoritative nature of the Tiberian reading are reflected in various ways.

Many manuscripts with Babylonian vocalization exhibit convergence with the Tiberian tradition of reading, eliminating thereby distinctly Babylonian features. In some manuscripts with Babylonian signs, there is almost total convergence with the

[104] II Firk. Evr. Arab. II 4633, fol. 241r-241v: ותמתילה לנפתלי באילה שלוׄ הו למא נטׄרה בעון אלנבוה ואנה יכון חסן אלקול גיד אלקראה גיד אללגה פי כלאם אלעבראני דלך אן מנחלת נפתלי יכרג אלמעלמין ואלאסתאדין מתל בן אשר ובן נפתלי אלדי אהל אלעאלם מן אליהוד יתבעון קראן הדין אלמעלמין והי קראה אלשאם אלתי אנבסטת פי {אדׄ} אפאק אלעאלם ואן אלמעלמין מנהא כרגו אלי בלדאן אלעראק וגירהא ועלמו אלנאס וכתבו אלנסך אלכתיר ומתלהא פי הדא כאילה שלוחה אלמחבובה אלמרבאה פי אלביות אלתי להא אנס פי אלקלב כמא כאן ללמעלמין אלדי בעתם (צ״ל בעתו) מן נחלת נפתלי אלי כל בלדאן אלגלות ליעלמו אלנאס קראה אלשאם לדלך קאל אילה שלוחה ... ואלקראן אלפאכר אלחסן אצלה מן נחלת נפתלי והו מדינת טבריה אלמערופה בהדא דון סואה לדלך קאל הנתן אמרי שׁ אד אלקראן הו אלאצל . This extract was published by Mann (1935, 2:104–5) with some mistakes in reading. The text above is the correct reading of the manuscript.

Tiberian pronunciation tradition and additional signs were even created to ensure a maximally close correspondence.[105]

The same applied to Biblical manuscripts with Palestinian vocalization. Many of these represent a reading tradition that is very close to the Tiberian one. This is almost certainly due to convergence, which involved the creation of signs to express vowel quality distinctions that did not occur in the Palestinian pronunciation.[106] It should be noted that the background and status of the Palestinian tradition of pronouncing the Hebrew Bible were different from the Tiberian and Babylonian. When the author of *Hidāyat al-Qāriʾ* refers to the reading of 'the Land of Israel', he is clearly referring to the Tiberian tradition, not the tradition of reading with Palestinian pronunciation. The term 'the reading of Palestine' (*al-Shām*) in the passage from the Karaite commentary on Genesis is likewise referring to the Tiberian tradition. The Karaite scholar al-Qirqisānī (tenth century Iraq) discusses in his *Kitāb al-ʾAnwār* the relative merits of the reading of Babylonia (*ʿIrāq*) and the reading of Palestine (*al-Shām*).[107] Here also what is intended is the Tiberian tradition. For al-Qirqisānī the Palestinian tradition of reading was not relevant in his discussion of authority. This appears to reflect the fact that the Palestinian pronunciation was a popular tradition of reading, which had no authoritative roots. Al-Qirqisānī's focus on the Babylonian and Tiberian traditions reflects the fact that only these two traditions had claims to authority. It is likely that this

[105] Yeivin (1985, 77–87).

[106] Revell (1977), Chiesa (1978).

[107] See the passages from al-Qirqisānī discussed in Khan (1990c).

was due to the fact they were both descendants of the original proto-Masoretic reading. Al-Qirqisānī maintains that of these two, the Tiberian is the most authoritative.

The distinctive features of Palestinian pronunciation, which are particularly discernible in the non-biblical manuscripts with Palestinian pronunciation, have close parallels with what is known about the vowel system of Jewish Palestinian Aramaic.[108] Unlike Tiberian and Babylonian, the Palestinian biblical reading is unlikely to be a direct descendant of the proto-Masoretic reading, but rather it has its roots in other traditions of reading that were current in Palestine in antiquity. The Greek transcription in Origen's Hexapla (the middle of the third century C.E.) reflects a reading that has even more evidence of influence from the Aramaic vernacular, especially in the pronominal suffixes, such as the 2ms suffix *-akh*, e.g. *σεμαχ* 'your name' (Tiberian שִׁמְךָ֗ Psa. 31.4).[109] This is also a feature of the Samaritan tradition, e.g. yēdåk 'your hand' (Tiberian: יָדְךָ).[110] Some of these features, such as the Aramaic type of pronominal suffixes, appear in medieval non-biblical texts with Palestinian vocalization. In the second half of the first millennium, however, it appears that the popular biblical reading converged to a greater extent with the prestigious Tiberian tradition. As a result, the Aramaic type of suffixes were eliminated in the biblical reading.[111]

[108] Fassberg (1991, 28–57).

[109] Brønno (1943, 110, 196–200).

[110] Ben-Ḥayyim (2000, 228).

[111] Yahalom (1997, Introduction).

Various features deviating from the Tiberian reading tradition that are found in the earlier biblical traditions are rarely attested in the medieval biblical traditions but are found in non-biblical Hebrew texts. This applies, for example, to the forms of the 2ms suffixes without a final vowel in Origen and Jerome, and indeed in the consonantal text that is found already in the proto-Masoretic biblical manuscripts from Qumran (ך-, ת-), which is a feature that surfaces in some traditions of post-biblical Hebrew (Ben-Ḥayyim 1954, 27–32, 63; Kutscher 1979, 442–43; Fassberg 1989), including biblical quotations within non-biblical Hebrew texts (Yahalom 1997, 24). The gutturals are clearly weakened in some biblical texts from Qumran and are omitted or interchanged in the orthography (Fassberg 2013, 665), but in the medieval biblical texts one does not find evidence of such systematic breakdown of distinctions. In non-biblical texts, on the other hand, there is evidence of such a weakening. In *piyyuṭim*, for example, ע often rhymes with א, and likewise ח rhymes with ה, reflecting a weakening of the pharyngeals to laryngeals (Yahalom 1985, 173). In *piyyuṭ* manuscripts with Palestinian vocalization segolate nouns ending in a guttural often have an 'e' vowel in the last syllable without a furtive *pataḥ* (e.g. מׄלׄח *meleḥ* 'salt', Tiberian: מֶלַח) (Yahalom 1997, 25), again reflecting the weakening of the guttural.

Another indicator of the prestigious nature of the Tiberian reading tradition is the fact that the early traditions of Hebrew grammar that emerged in the tenth century, i.e. those of Saadya Gaon and the Karaite grammarians, were based on the Tiberian

reading.[112] The grammarian Ibn Janāḥ (eleventh century Spain) states that the Tiberians were 'the most eloquent of the Hebrews in language and the most lucid'.[113]

Finally, there is evidence in some sources of hypercorrections in the production of the Tiberian reading. These reflect situations in which a reader's pronunciation of Hebrew differs from the standard Tiberian pronunciation, due to it belonging to a different tradition[114] or being influenced by a vernacular language, but the reader nevertheless attempts to pronounce words with the Tiberian pronunciation due to its prestige. In some cases, this results in producing distinctive features of Tiberian pronunciation that are used in the incorrect context (see chapter 4 for details).

I.0.10. The Internal Diversity of the Tiberian Tradition

There was not complete uniformity in any of the traditions of reading reflected by the vocalization systems. This applied also to the Tiberian school. We have seen (§I.0.8.) that there are inconsistencies in the Tiberian vocalization across different parts of

[112] Dotan (1997), Khan (2000b; 2000a). Some features of Babylonian pronunciation sporadically appear in the works of the eastern grammarians such as Saadya (Dotan 1997, 39) and the Karaites (Vidro 2011, 131–36).

[113] *Kitāb al-Lumaʿ* (ed. Derenbourg 1886, 29): הם אפצח אלעבראניין לסאנא ואכת̇רהם ביאנא.

[114] For examples of such hypercorrections in manuscripts reflecting a Tiberianized Babylonian tradition see Yeivin (1985, 185).

the Hebrew Bible. There were also various streams of tradition in the Tiberian Masoretic school that differed from one another in the reading and vocalization of particular words. The monumental Hebrew Bible manuscript codices with Standard Tiberian vocalization that have survived from the Middle Ages exhibit minor differences in vocalization of this nature. This applies even to manuscripts that were written by the same scribe.[115] Minor differences between vocalization practices of Masoretes and differences in the vocalization of codices are referred to also in Masoretic notes and Masoretic treatises. The tradition of vocalization reflected in the Standard Tiberian manuscripts was, however, far more uniform than other non-Tiberian traditions. This was the result of greater efforts of standardization of the Tiberian tradition due to its greater authoritative status. The standardization process is reflected in particular by Masoretic treatises collating differences between Masoretes, the best known being the 'Book of Differences' (*Kitāb al-Khilaf*) of Mishaʾel ben ʿUzziʾel, who was active in Jerusalem at the end of the tenth or early eleventh century.[116] This work concerned differences between the two

[115] Examples of this are manuscripts written by the scribe of L, Samuel ben Jacob, who has been identified as the scribe of several other early Bible manuscripts. These manuscripts exhibit minor differences in vocalization among themselves. See Phillips (2016; 2017; 2020).

[116] Lipschütz (1964; 1965). A manuscript preserved in the Karaite synagogue in Cairo (known as C3) contains the inscription אני מישאל בן עזיאל בן יוסף בן הלל בדקתי זאת התורה שלקדש חצר בן בכתויה ירחמיהו אל 'I Mishaʾel ben ʿUzzʾiel ben Yoseph ben Hillel checked this holy Torah in the enclosure of ben Bakhtavaih, may God have mercy on him' (Gottheil 1905

foremost Masoretic authorities at the end of the Masoretic period in the first half of the tenth century, Aharon ben Asher and Moshe ben Naftali. This lists disagreements between Ben Asher and Ben Naftali in 867 specific places and agreements of Ben Asher and Ben Naftali against another, usually unnamed, authority in 406 places. Most of these relate to differences in very small details. The majority of the disagreements concern the minor *gaʿya* (i.e. *gaʿya* on a short vowel in a closed syllable) and *shewa gaʿya* (i.e. *gaʿya* written on *shewa*) (§I.2.8.2.2., §I.2.9.). A few relate to spellings, divisions of words, and vocalization. Several of these are listed by Mishaʾel in the introduction as general differences rather than relating to specific passages. Ben Asher, for example, vocalized a preposition ל or ב with *shewa* when it was followed by *yod* with *ḥireq* (e.g. לְיִשְׂרָאֵל 'for Israel'), Ben Naftali, on the other hand, vocalized the first letter with *ḥireq* with no vowel on the *yod* (לִישְׂרָאֵל). Whereas Ben Asher vocalized יִשָּׂשכָר 'Issachar', Ben Naftali vocalized this name יִשְׂשָׂכָר. Another Masorete, Moshe Moḥe, vocalized it יִשְׂשָׂכָר. Ben Asher vocalized the *kaf* in all forms of the verb אכל 'to eat' before *segol* with *ḥaṭef pataḥ*, e.g., תְּֽאכֲלֶ֑נָּה 'you will eat it' (Ezek. 4.12), reflecting the reading of the *shewa* as mobile, whereas Ben Naftali read the *shewa* in all such cases as silent (§I.2.5.7.5.). The purpose of the collation of differences

no. 18; Penkower 1989). This is likely to be the Mishaʾel who was the author of *Kitāb al-Khilaf*. The scholarly institution known as the enclosure of ben Bakhtavaih was founded by Yūsuf ibn Bakhtavaih (also known as Yūsuf ibn Nūḥ) in Jerusalem at the end of the tenth century and was the hub of Karaite scholarship there in the first half of the eleventh century.

was to impose a degree of standardization on the Tiberian Masoretic tradition, which had developed into a number of heterogeneous sub-schools by the tenth century, of which those of Ben Asher and Ben Naftali were regarded as the most authoritative. The readings of Ben Asher in *Kitāb al-Khilaf* conform very closely to the readings of the manuscript A, which was produced by Ben Asher, and also to L, which contains many erasures and corrections that made the correspondence closer than was originally the case. The Ben Naftali readings conform closely to C.[117]

At the close of the Masoretic period in the tenth century and the early eleventh century, the traditions of Ben Asher and Ben Naftali were considered to be equally authoritative. Mishaʾel ben ʿUzziʾel does not give priority to Ben Asher or Ben Naftali in *Kitāb al-Khilaf*. In his Masoretic treatise *Hidāyat al-Qāriʾ*, ʾAbū al-Faraj Hārūn, likewise, does not give priority to either one of these two authorities. It is significant, however, that according to one passage in this treatise a reader should not mix the traditions according to personal assessment of correctness of the reading of individual words in each tradition. One should adopt either the tradition of Ben Asher in its entirety or that of Ben Naftali in its entirety:

> ‘The reader, therefore, has two options. Either to read with the reading of Ben Naftali, in which case he must read all good and difficult forms that he (Ben Naftali) reads, or to

[117] For differences between other Tiberian Masoretes see *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, 139–40), Levy (1936, לא-לג), Mann (1969, 2:43–44), Lipschütz (1965, 5), Yeivin (1981).

> read with the reading of Ben Asher, which also is authoritative. If somebody reads what he deems to be the best reading of this one and of that one, he would (read) without any rule, because he deviates from the rationale of each of them.'[118]

The lack of ranking of these Masoretic authorities was the practice among Masoretic scholars until the time of Maimonides, who declared Ben Asher to be the most reliable authority. David Qimḥi (d. 1235), it seems, was the first who decided in favour of Ben Asher in the context of reported differences between Ben Asher and Ben Naftali (Lipschütz 1965, 4).

The fact that the *Kitāb al-Khilaf* rarely mentions vowels and accents implies that their reading was virtually entirely fixed in a tradition over which there was consensus among Masoretic authorities. A passage in an anonymous Masoretic treatise discussing the cantillation of the Tiberian accents indicates that the way the accents are read has been transmitted 'from the hearts of the two masters (*ʾal-ʾustādhayin*)', i.e. Ben Asher and Ben Naftali, and they cannot be explained, i.e. their form is fixed by tradition and readers cannot exercise any personal initiative with regard to them:

> 'As for all the other accents, every one of them has a single melody that does not change for any reason, either lengthening or shortening, as is the case with pronouncing a vowel and shortening it. It is not possible to explain how

[118] Long version of *Hidāyat al-Qāriʾ*, edition in vol. 2 of this book, §II.L.1.7.11.

> they are read, because they are melodies transmitted from the hearts of the two masters.’[119]

This passage makes it clear that the ultimate bases of authority of the reading were Ben Asher and Ben Naftali. This can be compared to the way reading traditions of the Qurʾān (*qirāʾāt*) were anchored to the authority of particular scholars.

Although readers had to adhere to the traditions of Ben Asher and Ben Naftali in most details of their reading without personal initiative, the masters themselves did, it seems, take some degree of personal initiative in fixing their traditions. This applies in particular to Ben Naftali, whose reading tradition exhibits more consistency in various features than the more conservative tradition of Ben Asher. In some places, for example, Ben Naftali has introduced pausal forms where they are not found in the Ben Asher tradition, with the result that their distribution in his reading is more consistent than they are in that of Ben Asher (A. Ben-David 1957b). Ben Naftali, moreover, introduced various orthoepic measures into his tradition to ensure a greater accuracy of reading (§I.0.11.).

The focus on minor *gaʿya* and *shewa gaʿya* in the lists of *Kitāb al-Khilaf* indicates that these details also formed part of the fixed sub-traditions of Ben Asher and Ben Naftali. The fixing of the vowels, accents, minor *gaʿya* and *shewa gaʿya* is reflected by the fact that there is only minimal variation in these features across the model Masoretic Tiberian Bible manuscripts. By the

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[119] CUL T-S NS 301.21: ואמא באקי אלטעמים ג̇מיעהא כל ואחד מנהא לה לחן וחדה לא יתגייר מן סבב שי אמא תטויל או תקציר וכדלך פי אלתחריך ופי אלכטף ולא ימכן שרוחהא כיף תקרא לאנהא אלחאן תנקל מן צדור אלאסתאדין.

end of the Masoretic period, however, not every detail had been completely fixed and there was some permitted variation in the sign system and also some variation in the oral reading. This applied in particular to the writing of *ḥaṭef* signs on non-guttural consonants and the pronunciation of major *gaʿya* (i.e. *gaʿya* on long vowels) in the oral reading, as expressed by the following passages from *Hidāyat al-Qāriʾ*:

> The people responsible for this matter have agreed on the rule of combining *shewa* and a vowel (i.e. writing *ḥaṭef* signs) only under the four (guttural) letters. It is said, however, that some scribes wanted to remove uncertainty from places that may lead to error and have combined a vowel with *shewa* (under a non-guttural letter) … because they thought that people would err in the reading … This is an exception to their customary practice. What supports the claim that this is the view of only some of them with regard to letters not belonging to the group of the four (guttural letters) is that in most codices one does not find what has been presented as counterevidence (i.e. the combination *shewa* with a vowel under non-guttural letters), but all codices are uniform in the combination of *shewa* with a vowel under the four (guttural letters) letters.[120]

[120] Long version of *Hidāyat al-Qāriʾ*, edition in vol. 2 of this book, §II.L.2.12.6. Differences between scribes regarding the writing of *ḥaṭef* signs under non-guttural consonants is referred to also in in the earlier Masoretic treatise *Diqduqe ha-Ṭeʿamim*, which is attributed to Aharon ben Asher (ed. Dotan 1967, sec. 19).

> The *gaʿya* does not have a definite status in the reading of Scripture. One reader may omit it and another reader may sustain it.[121]

This is also reflected by the model Tiberian Masoretic Bible codices, which exhibit a greater degree of variation in the writing of *ḥaṭef* signs on non-guttural consonants (§I.2.5.5.) and the marking of major *gaʿya* than in features that had been fixed, such as vowels, accents, minor *gaʿya* and *shewa gaʿya*.

I.0.11. ORTHOEPY

The variation in the marking of *ḥaṭef* signs on non-guttural consonants reflects the continual efforts that were made to refine the vocalization system to ensure accurate reading towards the end of the Masoretic period. By combining a vowel sign with a *shewa* sign, the *shewa* was unambiguously marked as vocalic, which removed potential ambiguity of the sign in the vocalization system and so reduced the risk of inaccurate reading (§I.2.5.5.). Another measure to ensure correct reading of vowel length that is occasionally found in standard Tiberian manuscripts is the use of *ḥaṭef* signs in unstressed closed syllables to mark explicitly that the vowel is short. A few examples of this are found in L, e.g. בַּחֲרְטֻמִּ֑ם ‘on the magicians’ (Exod. 9.11), הָעֲרְבַּ֖יִם ‘the evening’ (Exod. 30.8), יֶחֱזְק֥וּ ‘they are strong’ (2 Sam. 10.11), יַעְכֳּרְךָ֥ ‘he brings trouble on you’ (Josh. 7.25) (§I.2.5.1.).[122]

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[121] Long version of *Hidāyat al-Qāriʾ*, edition in this vol. 2 of this book, §II.L.3.1.

[122] The phenomenon in L is described by Dotan (1985).

It is important to distinguish these differences in notation with regard to the clarity of representation of the reading from the existence of genuine differences in the reading between Masoretes that are reflected in works such as Mishaʾel ben ʿUzziʾel's *Kitāb al-Khilaf*.

I would like to focus here in particular on another development that took place within the Tiberian tradition, namely an increasing effort to pronounce the reading with maximal clarity, a phenomenon that I shall call orthoepy. Such orthoepic measures are sometimes not discernible from the vocalized text and can only be reconstructed from external sources, in particular transcriptions and Masoretic treatises.

The basic principle of orthoepy is to ensure that the distinct elements of the text are given their optimal realization, keeping them maximally distinct and avoiding slurring over them. These elements include letters, vowels, syllables and words.[123]

One orthoepic measure was to minimize the number of separate orthographic words that had no accent and so were at risk of being slurred over. The Tiberian tradition, in general, is more orthoepic in this respect than the Babylonian tradition through the Tiberian practice of placing conjunctive accents on orthographic words between disjunctive accents. In the Babylonian tradition, there are only disjunctive accents and the words between these are left without any accent (Shoshany 2003; 2013). The vocalization of some words that have acquired conjunctive accents in the Tiberian tradition reflects their

[123] This phenomenon corresponds closely to the careful recitation of the Arabic Qurʾān known as *tajwīd* (Nelson 2001).

originally unstressed status. This applies to stressed construct forms such as דְּבַ֣ר הַשְּׁמִטָּ֑ה ‘the matter of the release’ (Deut. 15.2), and cases such as אֶ֥ת גְּא֨וֹן יַֽעֲקֹ֗ב ‘the pride of Jacob’ (Psa. 47.5), כָּ֥ל אֲחֵי־רָ֨שׁ ‘all the brothers of a poor man’ (Prov. 19.7), where the object marker and the quantifier have the vocalization characteristic of their unstressed form (אֶת־ and כָּל־) rather than of their stressed form (אֵת and כֹּל).[124]

There are still, however, a sizeable number of orthographic words in the Tiberian tradition that have no accent and are connected to the following word by the *maqqef* sign. The lists of differences in *Kitāb al-Khilaf*, however, show that Ben Naftali in a number cases read a word with a conjunctive accent where Ben Asher read it with *maqqef* (A. Ben-David 1957b, 391–92), e.g.

Lev. 24.16

Ben Asher: בְּנָקְבוֹ־שֵׁ֖ם, Ben Naftali: בְּנָקְב֥וֹ שֵׁ֖ם ‘when he blasphemes the Name’

Gen. 39.6

Ben Asher: יְפֵה־תֹ֖אַר, Ben Naftali: יְפֵ֥ה תֹ֖אַר ‘beautiful in form’

Job 12.3

Ben Asher: וְאֶת־מִי־אֵ֥ין, Ben Naftali: וְאֶת־מִ֥י אֵ֥ין ‘with whom is not?’

This and other features of Ben Naftali’s tradition, some of which are discussed below, indicates that he introduced more

[124] Cf. the long version of *Hidāyat al-Qāri*ʾ, edition in vol. 2 of this book, §II.L.3.2.

orthoepic innovations in the reading than Ben Asher, who was, in general, more conservative.

The orthoepic measures taken to separate prosodically words connected by *maqqef* sometimes resulted in reading a word as prosodically separated even when the *maqqef* sign continued to be written. One clear example of this is the reading of the word מַה־ vocalized with *pataḥ* and connected by *maqqef* to the following word, the first letter of which has *dagesh*, e.g. וּמַה־דִּבֶּר 'and what did he say' (Jer. 23.35). It is clear that the *pataḥ* in this particle originally developed due to its prosodic and syllabic bonding with the following word, and this is reflected by the *maqqef*. It continued, however, to be written as an orthographically separate word. In order to ensure that the orthographic distinctness was expressed clearly in pronunciation one of two orthoepic strategies were followed, both of which are reflected by transcriptions of the Tiberian reading into Arabic script. The most common strategy was to lengthen the *pataḥ*, e.g. מַה־תִּצְעַ֣ק [maˑ-ttʰisˤˈʕaːaq̟] 'Why do you cry?' (Exod. 14.15). Another strategy was to glottalize the *pataḥ* vowel by pronouncing an [h] after the vowel, which separated syllabically from what followed, e.g. מַה־שְּׁמ֔וֹ [mah-ʃʃaˈmoː] 'What is his name?' (Exod. 3.13) (for further details see §I.2.8.1.2., §I.2.11.).

Various orthoepic measures were taken to ensure that adjacent letters in contact were enunciated clearly and not slurred together. Here again, these measures were more developed in the tradition of Ben Naftali than in that of Ben Asher. According to *Kitāb al-Khilaf*, Ben Naftali placed a *dagesh* in the first *nun* of the name נּוּן in the combination בִּן־נּוּן (ed.

Lipschütz 1965, כד). This was a measure to prevent the coalescence of two identical letters across a word-boundary, by strengthening the second letter, which stood at the onset of a syllable. Another strategy to keep the articulation of adjacent identical letters separate is seen in Ben Naftali's reading of the name Issachar יִשְׂשָׂכָר. In Ben Asher's tradition the second and third letter of the name are pronounced as a geminate *sin*: יִשָּׂשכָר [jissɔːχɔːʀ̟]. The form יִשְׂשָׂכָר [jiʃsɔːχɔːʀ̟] of Ben Naftali looks, *prima facie*, to be a more archaic form, corresponding more closely to the *ketiv* and perhaps to proposed etymologies of the name such as יש שכר 'there is hire' or איש שכר 'man of hire'.[125] It is possible, however, that the pronunciation of the second letter of the name as *shin* was an intentional dissimilation as an orthoepic strategy to keep it distinct from the *sin.* A similar process seems to have taken place in the name נְפוּשְׁסִים in Neh. 7.52. Here the first letter in the sequence שס is likely to have been a *sin* and this was dissimilated to *shin* by an orthoepic process to keep it distinct from the following identical sounding *samekh* (cf. the discussion of the form of this name in §I.0.8.).

Ben Naftali marked a *dagesh* in the *qof* of the verb יַעְקֹּב 'he supplants' (Jer. 9.3) (ed. Lipschütz 1965, לג) as a orthoepic strategy to ensure that the *shewa* on the preceding guttural was read as silent, and therefore not confused with the more common proper name יַעֲקֹב 'Jacob'. A related orthoepic measure that developed in the Tiberian tradition, which is not attributable to any specific subtradition, is what I call the extended *dagesh forte*

[125] See for example Skinner (1994, ad loc.).

reading. This involved pronouncing the *dagesh lene* of בגדכפת letters at the beginning of syllables as *dagesh forte* (§I.3.1.11.3.). The extended *dagesh forte* reading arose by giving the *dagesh* sign its full value in all contexts. The primary motivation for this was most likely an attempt to make a maximally clear distinction between fricative and plosive forms of the בגדכפת letters. Another effect of strengthening the pronunciation of the *dagesh* was to mark a clear separation between syllables.

The orthoepic features of the Tiberian reading have a variety of different historical depths. The orthoepic practices that we have examined so far appear to be developments that took place in the later stages of the transmission of the Tiberian reading, probably around the end of the Masoretic period in the tenth century. It is possible to identify some orthoepic measures, however, that have a greater time depth. One such case is the lengthening of the vowel of prefixes of the verbs הָיָה and חָיָה (§I.2.10.), e.g. תִּהְיֶה [tʰiˑhjɛː] 'it will be' (Jer. 7:34), יִחְיֶה [jiˑħjɛː] 'let him live' (Neh 2:3). The lengthening of the vowel of the prefixes in the verbs הָיָה and חָיָה is likely to have been an orthoepic measure taken to ensure that the initial guttural consonants were not weakened. If these consonants were weakened, the two verbs would not be formally distinguished. There is evidence that this particular orthoepic feature has deep historical roots that can be traced to the proto-Masoretic reading in Second Temple Palestine before the split of the Tiberian and Babylonian branches (see §I.2.10. for details). It arose as a measure to ensure that the gutturals were not weakened in these verbs at a period when gutturals were vulnerable to weakening under the influence of

Greek. It would appear, therefore, that orthoepy was already a feature of the ancient reading and that care over the oral reading of the text went hand in hand with care over the copying of the written text at an ancient period, presumably within Temple circles during the Second Temple period.

I.0.12. The Close of the Tiberian Masoretic Period

The activities of the Tiberian Masoretes came to an end in the tenth century after the generation of Aharon ben Asher and Moshe ben Naftali. The archaeological record shows that Tiberias was almost deserted in the second half of the eleventh century. This seems to have been due to the combined effect of devastating earthquakes in 1033 and 1068 and the political instability caused by the Seljuk raids into Palestine in the middle of the eleventh century. When the Crusaders invaded Palestine in 1099, Tiberias was a half-ruined city (Avni 2014, 87–88; Gil 1992, 397–418). The cessation of the activities of the Masoretes, however, occurred before this decline of the city in the tenth century, when, it seems, the city was still thriving. The key factor that brought about the end of the Masoretic school is likely to have been the removal of the Palestinian *Yeshiva* to Jerusalem, which can be dated to the middle of the tenth century.[126]

The knowledge of the Tiberian reading tradition, which was the most prestigious form of pronunciation, rapidly fell into oblivion after this period. During the period in which the Tiberian Masoretes were active, the oral tradition of Tiberian reading was transmitted alongside the vocalization sign system.

[126] Gil (1992, 499–500), Wechsler (2013).

As we have seen, the sign system, indeed, was constantly being refined to represent the reading with maximal accuracy. This is clear, for example, in the many added *ḥaṭef* signs under non-guttural consonants in A, which was vocalized by Aharon ben Asher in the Masoretic period. The oral reading tradition was primary and the sign system was a mechanism of graphic notation.

Bible codices, of course, also had the consonantal text (*ketiv*). In the Talmudic period, a practice developed of interpreting Scripture on two levels, one according to the consonantal text (*ketiv*) and one according to the way it was read (*qere*). It is reflected by the Talmudic dictum יש אם למקרא ויש אם למסורת 'The reading has authority and the traditional text has authority.'[127] Traces of this type of exegesis are found in medieval sources. It was a practice that was condemned by many medieval Karaites, who recognized the authority of only the reading tradition.[128] This is reflected not only in their rejection of exegesis on the basis of the *ketiv*. They used vocalized codices rather than scrolls for liturgical reading.[129] Moreover, in many cases they dispensed with the Hebrew *ketiv* altogether and wrote biblical

[127] Naeh (1992; 1993), who argues that this exegetical technique was not practiced in the Rabbinic tradition before the Amoraic period.

[128] A vocal exponent of this was the Karaite al-Qirqisānī, see Khan (1990c) and §I.0.13.3. Some medieval Karaite scholars did, however, accept the possibility of interpreting according to the *ketiv* where it conflicted with the *qere*, see al-Fāsi, *Kitāb Jāmiʿ al-ʾAlfāẓ* (ed. Skoss 1936, vol. 1, 12-13), Hadassi (Bacher 1895a, 113) and Habib (2020).

[129] Allony (1979).

manuscripts that consisted of Arabic transcriptions of the reading tradition.[130]

The Karaite grammarian ʾAbū al-Faraj Hārūn, who wrote his works in Jerusalem in the first half of the eleventh century, states in the introduction to his Masoretic treatise *Hidāyat al-Qāriʾ* that his sources were earlier Masoretic treatises and the pupils of the writers of these earlier treatises.[131] This indicates that he had access to an oral tradition of instruction in the Tiberian reading that was still alive in his time in Jerusalem. Karaite scholars in Jerusalem in the eleventh century were, in many respects, the heirs of the Masoretic school. It was in Jerusalem in the early eleventh century that Mishaʾel ben ʿUzziʾel, who was also a Karaite, composed his work *Kitāb al-Khilaf*, which recorded differences between the Masoretes Aharon ben Asher and Moshe ben Naftali (Penkower 1989).

Already at this period, however, Hebrew grammarians outside of Palestine were not able to gain direct access to the oral tradition of Tiberian reading. Ibn Janāḥ writing in the first half of the eleventh century in Spain, for example, laments the fact that he was not able to verify the length of particular occurrences of *qameṣ* vowels in the Tiberian tradition:

> ‘In such places [i.e. in the reading of the biblical text] and others like them, a person needs readers and teachers [of

[130] Khan (1992b).

[131] Edition in vol. 2 of this book, §II.L.0.9.

> the Tiberian tradition], which we lack in this country of ours.'[132]

After the close of the Masoretic period and the death of the primary Masoretic authorities Ben Asher and Ben Naftali, the anchoring of the written vocalization signs to authoritative oral traditions was broken. The primary base of authority began to shift to the vocalization sign system, which was the textualization of these oral traditions. Only the oral reading of Masoretic authorities such as Ben Asher and Ben Naftali was independent of the vocalization vowel system. This is the import of the following passage in *Hidāyat al-Qāriʾ*:

> Indeed there is no doubt that when somebody takes a simple codex without accents or pointing, he stumbles in the reading … apart from a few exceptional people that are found in some generations, such as Ben Asher and Ben Naftali in their time and those like them.[133]

As the orally transmitted Tiberian reading was lost and the primacy of its authority was transferred to the written sign system, the signs were read with reading traditions that differed from the Tiberian tradition. The incipient signs of this are found

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[132] פפי הדֿה אלמואצֿע וגירהא מתֿלהא יצֿטר אלאנסאן אלי אלרואה̈ ואצחאב אלתלקין אלדֿין עדמנאהם נחן פי קאציתנא הדֿה, *Kitāb al-Lumaʿ*, ed. Derenbourg (1886, 322–23). Ibn Ezra states that 'scholars of Egypt and [North] Africa' (חכמי מצרים ואפריקייא) knew how to pronounce the Tiberian *qameṣ* correctly; cf. *Sefer Ṣaḥot* (ed. Lippmann 1827, 3b). This was presumably referring to his own time, i.e. the twelfth century.

[133] Long version of *Hidāyat al-Qāriʾ*, edition in vol. 2 of this book, §II.L.3.0.

in a variety of medieval manuscripts in which standard Tiberian vocalization is written under words with another vocalization system.[134] These can be interpreted as reflecting the tolerance of two traditions of written vocalization alongside each other in a way that can be compared to the apparent tolerance of different written textual traditions alongside each other in some Qumran manuscripts, which has been alluded to above (§I.0.2.).[135] It is clear from the medieval sources that one of the traditions in such manuscripts, viz. the Tiberian, was more prestigious.

One of the consequences of the shift of authority to the written vocalization and accent sign systems after the loss of the Masoretic authorities who were guarantors of the oral tradition was the increasing production and reliance on Bible codices that recorded the authoritative sign systems.[136]

In most communities other than Yemen the oral traditions that came to be used to read the standard Tiberian vocalization were derived ultimately from the Palestinian pronunciation of Hebrew, with a five vowel system (without distinctions between *qameṣ* and *pataḥ*, on the one hand, and *ṣere* and *segol*, on the other) that was based on that of Jewish Palestinian Aramaic. As we have seen, the Palestinian pronunciation tradition had no

[134] In the Genizah Bible manuscript T-S A38.10, for example, the scribe has vocalized the text with both Babylonian and Tiberian signs.

[135] A similar situation is found in some early Qurʾān manuscripts in which the vocalization records different reading traditions, distinguishing them with different colours of ink (Dutton 1999; 2000).

[136] See Outhwaite (2018) for discussion of the commissioning and production of codices.

authoritative roots, but this was not relevant after the transition of the authority of the Tiberian tradition from the oral reading to the written sign system. It was the written sign system that now preserved the authoritative standard. This meant that the process whereby the Palestinian pronunciation was adapted to converge with the standard Tiberian pronunciation, which is reflected in manuscripts with Palestinian vocalization signs, now no longer took place.

It is unlikely that the removal of the Palestinian *Yeshiva* from Tiberias was the only factor that brought about the loss of the oral Tiberian reading tradition. Another factor is likely to have been that it was transmitted by a very small number of elite practitioners. A related issue was that the conservative Tiberian tradition and its highly careful orthoepic features deviated in various ways from the spoken vernacular languages of the Jewish communities. The Palestinian pronunciation of Hebrew, by contrast, was very widely used and was closer to the vernacular. As remarked, the vowel system of the Palestinian pronunciation had its roots in that of Jewish Palestinian Aramaic, which was the vernacular of the Jews in the early Islamic period. When the Jews of the region adopted Arabic as their vernacular, this rapidly had an impact on the Palestinian pronunciation tradition. In regions where the Arabic dialects did not have interdental fricatives (*θ* and *ð*), for example, there is evidence that already in the Middle Ages the Hebrew consonants *tav* and *dalet* came to be pronounced as stops (*t* and *d*) in all contexts (§I.4.2.) (Khan 1997).

Developments in the transmission of the Qurʾān in the tenth century may also have had an impact on the fate of the Tiberian reading tradition. At this period an official policy, endorsed by the ruling ʿAbbāsid régime, was instigated by the scholar Ibn Mujāhid (d. 324 A.H./936 C.E.) to reduce the number of reading traditions of the Qurʾān.[137] Before the time of Ibn Mujāhid, a very large number of reading traditions of the Qurʾān existed. Many of these were transmitted by only a small number of readers. As a result of the activity of Ibn Mujāhid, the traditions with restricted numbers of transmitters were eliminated in favour of seven canonical traditions that had wide levels of transmission. Some of the smaller traditions that were lost exhibited unusual features that deviated from normal Arabic usage. One example of such non-canonical readings (*šawādhdh*) that is of particular interest in light of the discussion above concerning the orthoepic extension of *dagesh forte* to all contexts in Tiberian Hebrew (§I.0.11.) is the practice of some Qurʾān readers to geminate a consonant after a preceding vowelless consonant, e.g. يَخْطِّفُ *yakhṭṭifu* 'it takes away' (Q 2.20).[138] This process of obsolescence of traditions with small numbers of transmitters and with features that deviated from normal Arabic usage, which took place in the Islamic world in the tenth century, could have influenced the transmission of the Hebrew Bible at that period,

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[137] Ibn Mujāhid, *Kitāb al-Sabʿa fī al-Qirāʾāt* (ed. Cairo, 1972), Nöldeke et al. (1938, 155–56).

[138] This is recorded in the collection of *shawādhdh* by Ibn Khālawayh (d. 370/980), *Mukhtaṣar fī Shawādhdh al-Qurʾān min Kitāb al-Badīʿ* (ed. Bergsträsser, 1934, 3).

whereby the continuation of the Tiberian oral reading was disfavoured due to the small number of readers.

After the loss of the orally transmitted Tiberian pronunciation and its textualization as a historical relic in the written signs, readers and teachers of the Hebrew Bible were obliged to interpret the sign system as it was received. Many features of the Tiberian pronunciation that are not discernible in the sign system fell into complete oblivion. These include the orthoepic features I have described above, such as the extended *dagesh forte* reading. In the later Middle Ages, the standard Tiberian sign system was a graphic fossil that reflected an extinct tradition that was different from the pronunciation traditions of the various communities. In some cases, however, the reading was adapted to the sign system. A conspicuous example of this is the development of Biblical reading in late medieval Ashkenaz.

The distribution of vowel signs in manuscripts from medieval Ashkenaz dating to the twelfth and thirteenth centuries reflects a five-vowel system, in which no distinction is made between *qameṣ* and *pataḥ*, nor between *ṣere* and *segol*.[139] This indicates that at that period the pronunciation of the Ashkenazi communities still had the original Palestinian five vowel system. By the middle of the fourteenth century, a new vowel system evolved in the Ashkenazi tradition of Hebrew, in which there was a distinction in pronunciation between *qameṣ* and *pataḥ* and between *ṣere* and *segol*. One of the main causes of this change in the vowel system was the occurrence of vowel shifts in the dialects of German that were spoken by the Jews. In the twelfth

[139] Eldar (1978).

century, a number of German dialects, including Yiddish, developed a labio-velar pronunciation (in some [o] and in others [u]) of Middle High German [aː] as well as of [a] in an open syllable. This shift found its way into the Hebrew component of Yiddish. Since, however, words of Hebrew origin were assimilated into Yiddish at an earlier period, in which there were no quantitative distinctions (between long and short *a*), this shift only affected cases of [a] in an open syllable. In Hebrew words that met the criteria for the shift to [o] or [u], a lengthened [a] in open syllables mostly corresponded to historical *qameṣ*, e.g., [poter] (= פָּטוּר) 'released', [boro] (= בָּרָא) 'he created', [dvorim] (= דְּבָרִים) 'words', and in a few cases also to historical *pataḥ*, as in [noxem] (= נַחוּם) 'Nahum', [kadoxes] (= קַדַּחַת) 'fever'. In the thirteenth and fourteenth centuries, Yiddish began to develop a diphthongized articulation of long [eː] in an open syllable. The shift [eː] > [ei] or [ai] entered the Hebrew component of Yiddish as a reflection of *ṣere* (in an open syllable), as in [eyme] (= אֵימָה) 'terror', [breyšis] (= בְּרֵאשִׁית) 'in the beginning' and also as a reflection of *segol* (in an open syllable) in a small group of words that were pronounced in Yiddish as if they were vocalized with *ṣere*, e.g., [meylex] (= מֶלֶךְ) 'king', [keyver] (= קֶבֶר) 'grave', etc. The variations between [o] and [u], on the one hand, and [ei] and [ai], on the other, in Ashkenazi Hebrew were reflections of the local dialects of Yiddish. At approximately the same period as these vowel shifts took place in the vernacular dialects, the scribes in Ashkenaz began to make an association between the newly developed vowel distinctions and the Tiberian vowel signs.

What is of particular interest is that in the biblical reading tradition mismatches between the sign system and the pronunciation were adjusted, e.g. *pataḥ* was always read with the [a] quality, even where it was pronounced as [o] or [u] due to the sound shift of [a] in stressed open syllables in the Hebrew component of Yiddish, e.g. [kadoxes] (= קַדַּחַת). The written sign system, therefore, had an impact on the biblical reading tradition, in that there was an attempt to assign a particular phonetic value to each sign.[140]

This development of the Ashkenazi reading in the late Middle Ages reflects the primacy of the authority of the written sign system over the oral reading tradition. Such a phenomenon should be contrasted with the situation in the Masoretic period, when the oral Tiberian reading tradition of particular Masoretes had primary authority and the sign system underwent a constant adaptation to reflect it.

We may identify a typological parallel here between the developments after the destruction of the Second Temple and those that occurred after the demise of the Tiberian Masoretic school. Before the destruction of the Temple, there was a stabilized proto-Masoretic text within a pluriformity of other textual traditions. After the destruction of the Temple the prestigious proto-Masoretic text gained general acceptance. The diversity reflected by the pluriform biblical manuscripts from Qumran was replaced by a uniform prestigious text that was read with a pluriformity of oral reading traditions, of which one, the Tiberian tradition, was regarded as the most prestigious. After the dispersal of the Tiberian school, the pluriform written

[140] Weinreich (1965), Eldar (2013).

vocalization sign systems reflecting the different oral reading traditions were gradually replaced by a uniform prestigious vocalization system that was read with a pluriformity of oral reading traditions. In both cases, there was a punctuation in Jewish society involving the loss of a central prestigious body that was responsible for the stabilization of the transmission of the Hebrew Bible. In the first century C.E., this was the destruction of Temple. In the tenth century C.E., it was the loss of the Tiberian Masoretic school. In both cases, after the ongoing activity of stabilization ceased, the tradition reached completion and became fossilized. In both cases, the written tradition, of the text or of the vocalization system respectively, gained general acceptance.

I.0.13. Sources for the Tiberian Pronunciation Tradition

The early model Tiberian Bible codices are an important starting point for the reconstruction of the Tiberian pronunciation tradition. Various additional sources, however, are crucial for establishing many aspects of pronunciation that are not discernible in these codices. In this section, we shall review these additional sources.

I.0.13.1. Masoretic Treatises

A number of important details relating to pronunciation can be found in a variety of treatises written by Tiberian Masoretes or by scholars close to their circle who had direct access to the Tiberian Masoretic tradition.

A number of early Masoretic treatises that are written in rhymed Hebrew and preserved mainly at the end of the medieval Tiberian Bible codices contain material relating to pronunciation. Many of these were published by Baer and Strack (1879). They relate to selected issues concerning vocalization and accents, particularly the *shewa* and *gaʿya*. In some cases, they go beyond description and offer explanatory rules for differences based on their context of occurrence. Some of the Hebrew texts gathered by Baer and Strack, furthermore, concern topics relating to grammatical theory, such as the classification of consonants according to their points of articulation, or according to whether they are 'radical' or 'servile' letters, the distinction between construct and absolute forms, the distinction between contextual and pausal forms, and verbal tenses.

Baer and Strack attributed the majority of the texts in their corpus to a Masoretic treatise known as *Diqduqe ha-Ṭeʿamim* (see below for meaning) by the Masorete Aharon ben Asher (tenth century), although they did not clearly delineate the scope of the treatise. Dotan (1967) made a thorough study of such texts and concluded that the original treatise of Ben Asher contained twenty-six sections, which are reproduced in a fixed order in some manuscripts. Other sections, of unknown authorship, were subsequently added to these in various manuscripts. The work was not intended as a systematic collection of rules relating to the accents, but only as a treatment of selected details that were regarded as potentially problematic. This is reflected by the name of the work *Diqduqe ha-Ṭeʿamim*, which can be rendered 'The Fine Details of the Accents'. The work also includes discussions of

some aspects of vocalization, in particular of the *shewa*. Dotan argues that Aharon ben Asher incorporated some of the material of *Diqduqe ha-Ṭeʿamim* from earlier Masoretic collections. This probably explains why the work is in Hebrew, since in the tenth century Masoretic treatises were generally written in Arabic. The source material for the work is likely to have been composed in the ninth century.

A number of Arabic Masoretic treatises are extant that are datable to the tenth century. Most of these concern the biblical reading tradition and its phonological principles. In some cases, a number of the technical terms and even sections of the text itself are in Hebrew. These Hebrew elements may be regarded as vestiges from the earlier Hebrew tradition of Masoretic treatises. Some of the texts datable to the tenth century include treatises on vowels and the *shewa*, such as those identified by Allony as *Kitāb al-Muṣawwitāt* 'The Book of Vowels' (Allony 1963) and *Seder ha-Simanim* 'The Order of Signs' (Allony 1965). These two treatises offer explanations for the distinction between vowels based on factors such context and placement of stress, and develop many of the topics that are found in the *Diqduqe ha-Ṭeʿamim*. In some cases, the explanations for distinctions in vowels is correlated with semantic distinctions, which is a level of functional explanation not found in earlier texts. The functional concern of the work is also clear in the title of one of the extant sections of the text *ʿilal al-muṣawwitāt* 'the reasons for the vowels' (Morag 2003, 251–52). An Arabic treatise devoted to the *shewa* that is datable to the tenth century was published by Levy (1936). This develops an analysis of the *shewa* based on a

theory of syllable structure. The treatise warns that mistakes in reading *shewa* can lead to the corruption of the form of words and, in general, has a pedagogical tone. This reflects the fact that the correct transmission of the Tiberian reading still depended on a tradition of teaching even after the details of the Tiberian Masora had been committed to writing (Eldar 1994, 3–8; Khan 2012, 3–4).

Allony (1973) published a fragment of an Arabic treatise on consonants, which he attributed to ʿEli ben Yehudah ha-Nazir. This also appears to be datable to the tenth century. The extant text is concerned mainly with the pronunciation of the letter *resh*. A remarkable feature of this text is the reference by the author to the fact that he undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* in Tiberian reading, on the grounds that *resh* had the same pronunciation in the local speech of the (Jewish) inhabitants of Tiberias: "I spent a long time sitting in the squares of Tiberias and its streets listening to the speech of the common people, investigating the language and its principles, seeing whether anything that I had established was overturned or any of my opinions proved to be false, in what was uttered with regard to Hebrew and Aramaic etc., that is the language of the Targum, for it resembles Hebrew … and it turned out to be correct and accurate". The interpretation of this is not completely clear. The Aramaic mentioned by the author could have been vernacular Aramaic that was still spoken in Tiberias at the time. The Hebrew must have been the recitation of Hebrew liturgy or the occurrence of a 'Hebrew component' (Hebrew words and

phrases) within vernacular speech. Drory (1988, 33–35) suggested that this report of fieldwork may have been an imitation of the topos in the medieval Arabic grammatical literature of verifying grammatical phenomena by carrying out fieldwork among the Bedouin Arabs, who were deemed to be speakers of 'pure Arabic', the inhabitants of Tiberias being the corresponding tradents of pure Hebrew. A Hebrew treatise concerning the *resh* is found also in the corpus published by Baer and Strack (1879, §7), in which it is likewise stated that this pronunciation existed in the conversational speech of the common people (והוא קשור בלשונם אם יקראו במקרא ואם ישיחו בשיחתם והוא בפי האנשים והנשים ובפי הטף 'it is on their tongues, whether they read the Bible or converse in their conversation, in the mouths of men, women, and children').

The authorship of these works on Tiberian pronunciation cannot be established with certainty, although Allony, who published many of them, attributed them to various medieval scholars who are known from other sources. In most cases, there is no decisive evidence for these attributions and they should be treated with caution (Eldar 1986). It has been argued by Eldar (1988) that the treatise on the *shewa* published by Levy (1936) and *Kitāb al-Muṣawwitāt* 'The Book of Vowels' published by Allony (1963) are parts of the same work.

An important work composed in the eleventh century was the *Hidāyat al-Qāriʾ* 'The Guide for the Reader'. This work was studied in detail by Eldar, who published sections of it (see, in particular, Eldar 1994 and the references cited there). It can be classified as a Masoretic treatise, although, unlike the treatises

discussed above, the *Hidāyat al-Qāriʾ* was composed several decades after the time in which the final Tiberian Masoretic authorities, Ben Asher and Ben Naftali, were active. Its author was the Karaite grammarian ʾAbū al-Faraj Hārūn, who was based in Jerusalem in the first half of the eleventh century (Khan 2003). Although he did not have direct contact with the Masoretes of the tenth century, he did have access to teachers of the Tiberian reading tradition, who could still be found in Palestine in the eleventh century, in addition to the Masoretic treatises of earlier generations. ʾAbū al-Faraj produced the work in a long and a short version. The long version, which was composed first, contains more expansive theoretical discussions. The short version became more popular, as is reflected by the greater number of extant manuscripts. The work presents a systematic description of the consonants, vowels (including *shewa*), and accents. It was divided into three parts, part one being devoted to the consonants, part two to the vowels, and part three to the accents. The *Hidāyat al-Qāriʾ* was conveyed beyond the confines of Palestine to Yemen and to Europe. The long version was transmitted to Yemen, probably in the thirteenth century. Two abridgements were made of this in Yemen, one in Arabic (ed. Neubauer 1891) and one in Hebrew (ed. Derenbourg 1871). Each of these was known as *Maḥberet ha-Tījān* 'The Composition of the Crowns', since they were copied at the beginning of Bible codices known as 'crowns' (Arabic *tījān*) (Eldar 1994, 15–16).[141] The short version of *Hidāyat al-Qāriʾ* found its way to central Europe

[141] Another derivative Arabic version was published in Ginbsburg's (1885, 43-51) corpus of Masoretic material.

and two full Hebrew translations were made of it. One was made in Mainz and was given the title *Horayat ha-Qore* 'Guide for the Reader' in the manuscripts, the earliest being datable to the thirteenth century. The other translation was given the title *Tokhen ʿEzra* 'The Ruling of Ezra' in a manuscript dated 1145 and the title *Ṭaʿame ha-Miqra* 'The Accents of the Bible' in a manuscript dated 1285–1287. Both copies were made in Italy. In the version entitled *Ṭaʿame ha-Miqra* the work is erroneously attributed to the Spanish grammarian Yehudah ibn Balʿam (Busi 1984; Eldar 1994, 16–18).

The sections on the consonants and vowels in *Hidāyat al-Qāriʾ* are of great importance for the reconstruction of the Tiberian pronunciation tradition. This applies in particular to the original Arabic long and short versions. So far, no full edition of these is available. I have, therefore, included a critical edition of the sections on consonants and vowels of the Arabic versions of *Hidāyat al-Qāriʾ* together with a facing English translation as a supplementary volume to this book. Eldar (2018) has recently published the section on the accents from the Arabic versions.

I.0.13.2. Masoretic Notes

The Masoretic notes in the margins of Bible codices occasionally contain information about the pronunciation of the reading tradition that supplements what is encoded in the vocalization sign system. This applies in particular to notes that relate to vowel length. The Masoretic note חטף 'short', for example, occurs in places where there may be some doubt as to whether a vowel is long or short, as in:

L: זָכְרָ֫ה 'remember!' (2 Chron. 6.42). Masoretic note: ל̇ חטף בסיפ̇ 'the only form in the book in which the vowel is short', i.e. it is an imperative with a short *qameṣ* and not a 3fs. past verbal form, which would have had a long *qames*.

A: רִבְבֹ֥ות 'ten thousands of' (Deut. 33.17). Masoretic note: חטף 'short', i.e. the *ḥireq* is short here, in contrast to cases with *gaʿya*, such as רִֽבְב֖וֹת (Num. 10.36), in which the *ḥireq* is long.

I.0.13.3. Karaite Transcriptions of the Hebrew Bible into Arabic Script

In the tenth and eleventh centuries C.E., many Karaite scribes in the Middle East used Arabic script not only to write the Arabic language but also to transcribe Hebrew. Such Hebrew texts in Arabic transcription were predominantly Hebrew Bible texts. These were sometimes written as separate manuscripts containing continuous Bible texts. Some manuscripts in Arabic script contain collections of Biblical verses for liturgical purposes. Arabic transcriptions of verses from the Hebrew Bible or individual Biblical Hebrew words were, in many cases, embedded within Karaite Arabic works, mainly of an exegetical nature, but also in works of other intellectual genres. Several Karaite Arabic works also contain Arabic transcriptions of extracts from Rabbinic Hebrew texts (Tirosh-Becker 2011). The Karaites transcribed into Arabic script only texts with an oral reading tradition, as was the case with the Hebrew Bible and Rabbinic texts in the Middle Ages. The transcriptions reflect, in principle, these oral traditions. It is for this reason that the transcription of the Hebrew Bible

represents the *qere* (the orally transmitted reading tradition of the text) rather than the *ketiv* (the written tradition) (Khan 1992b).

Most of the known manuscripts containing Karaite transcriptions of Hebrew into Arabic script are found in the British Library (Khan 1993), the Firkovitch collections of the National Library of Russia in St. Petersburg (Harviainen 1993a), and in the Cairo Genizah collections (Khan 1990a). These manuscripts emanate from Palestinian circles of Karaites or Karaites in Egypt who had migrated to Egypt from Palestine after the capture of Jerusalem by the Crusaders in 1099. The majority of them were written in the tenth and eleventh centuries. Most of the transcriptions of Biblical Hebrew reflect the Tiberian reading tradition. The transcriptions, therefore, are an important source for the reconstruction of this reading tradition. The Karaites represented a movement within Judaism and were closely associated with the Tiberian Masoretes (§I.0.4.). The tradition of Biblical Hebrew reflected by their texts is not a separate communal tradition comparable, for example, to that of the Samaritans.

The Karaite Hebrew grammarians of the tenth and eleventh centuries were, in general, concerned with the reading tradition (*qere*) reflected by the Tiberian vocalization signs and showed little concern for the orthography of the written text (*ketiv*) (Khan 2000b; 2003; 2013b). The Karaite al-Qirqisānī, in his discussions of the bases of authority for the Hebrew Bible, contended that the ultimate authoritative source was the reading tradition of the people of Palestine (by which he meant Tiberias), rather than the written form of the text with orthographic inconsistencies. One

of his justifications was that the reading tradition had been transmitted by the whole community (*ʾumma*) since the time of the prophets whereas the written orthography had been transmitted on the authority of small circles of scribes, which is, therefore, more liable to corruption or wilful change (Khan 1990c). The Arabic transcription texts can be understood most easily as a reflection of the priority that the Karaites gave to the reading tradition.

I.0.13.4. Grammatical and Lexicographical Texts

Some of the early works on Hebrew grammar were written by scholars who had knowledge of the pronunciation of Hebrew in the Tiberian reading tradition. All these were written in the Middle East in the tenth and eleventh centuries at the end of the Masoretic period. As has been remarked, the grammarians of Spain did not have direct access to the Tiberian reading tradition, despite their extensive discussion of vocalization and phonology in a number of their works.

The grammatical works written by grammarians with a knowledge of the Tiberian reading tradition can be classified into the works of Saadya Gaon and the works of Karaites.

The grammatical writings of Saadya contain elements taken from the Masoretic tradition (Dotan 1997). After leaving Egypt, Saadya spent a few years in Tiberias studying with the Masoretes. According to Dotan, he composed his main grammar book (*Kitāb Faṣīḥ Lughat al-ʿIbrāniyyīn* 'The Book of the Eloquence of the Language of the Hebrews, also known as *Kutub al-Lugha*

'Books of the Language') while he was in Tiberias during the second decade of the tenth century. The surviving sections of the work include not only treatments of grammatical inflection and word structure, but also several chapters relating to the Tiberian reading tradition. The material for some of these has clearly been incorporated from the Masoretic tradition and direct parallels can be found in the extant Masoretic treatises, such as *Diqduqe ha-Ṭeʿamim* (Dotan 1997, 34–36). Dotan, indeed, suggests that one of the missing chapters may have been concerned specifically with accents. We may say that Saadya's grammar book is not a product of collaboration with the Masoretes or a complementary expansion of the scope of Masoretic teaching, but rather was intended to stand apart from the Masoretic tradition.

The grammatical texts written by the Karaites, on the other hand, reflect a closer association with Masoretic activities, in that they were intended to complement the Masoretic treatises rather than incorporate elements from them. Several grammatical works have come down to us that were written by Karaite scholars who had direct access to the Tiberian reading tradition. These can be divided into works reflecting the early Karaite grammatical tradition and those written by the grammarian ʾAbū al-Faraj Hārūn together with texts dependent on ʾAbū al-Faraj's works. The main source for the early Karaite grammatical tradition is the grammatical commentary on the Bible of ʾAbū Yaʿqūb Yūsuf ibn Nūḥ, known as the *Diqduq*, which was composed in Jerusalem the second half of the tenth century. ʾAbū al-Faraj's works are datable to the first half the eleventh century and were, likewise, written in Jerusalem (Khan 2003). The *Diqduq* of Ibn Nūḥ

contains some discussion of pronunciation and accents, but this is usually related to some issue regarding linguistic form. The *Diqduq* was intended, it seems, to complement such treatises as *Diqduqe ha-Ṭeʿamim*, the exclusive concern of which was pronunciation and accents.

ʾAbū al-Faraj Hārūn ibn Faraj wrote several works on the Hebrew language. The largest of these is a comprehensive work on Hebrew morphology and syntax consisting of eight parts entitled *al-Kitāb al-Mushtamil ʿalā al-ʾUṣūl wa-l-Fuṣūl fī al-Lugha al-ʿIbrāniyya* 'The Comprehensive Book of General Principles and Particular Rules of the Hebrew Language' (Bacher 1895b; Khan 2003). ʾAbū al-Faraj subsequently wrote a short version of this entitled *al-Kitāb al-Kāfī fī al-Lugha al-ʿIbrāniyya* 'The Sufficient Book concerning the Hebrew Language', the entire text of which has been edited with an English translation (Khan, Gallego, and Olszowy-Schlanger 2003). The works of ʾAbū al-Faraj were radically different from the *Diqduq* of Ibn Nūḥ in their approach. There was, nevertheless, a certain degree of continuity of grammatical thought from the teachings of the earlier Karaite grammarians in the works of ʾAbū al-Faraj, which can be found especially in some of his theories of morphological structure. This continuity can be identified also in the scope of his grammatical works and their complementarity to the Masoretic treatises. The subject matter of *al-Kitāb al-Mushtamil* and his other grammatical works includes mainly the description of morphology and syntax. There is no systematic description of pronunciation or the accents. As we have seen, ʾAbū al-Faraj devoted a separate work to this topic, viz. the *Hidāyat al-Qāriʾ* 'The Guide for the Reader'.

This was intended by him to complement his work on grammar. It was conceived as a continuity of earlier Masoretic treatises on pronunciation and accents, which were among his sources, as ʾAbū al-Faraj states in his introduction to the work. Thus the composition of *Hidāyat al-Qāri* by ʾAbū al-Faraj separately from his grammatical works may be explained as a continuation of the complementarity between grammatical and Masoretic treatises that existed among the Karaite grammarians of the previous generation (Khan 2014).

A number of valuable observations about the Tiberian pronunciation tradition are found in the extensive lexicographical work written in Palestine in the tenth century by the Karaite scholar David ben Abraham al-Fāsī known as *Kitāb Jāmiʿ al-ʾAlfāẓ* 'Book of the collection of words' (ed. Skoss 1936).

I.0.13.5. Commentaries on *Sefer Yeṣira*

Sefer Yeṣira is a mystical work of cosmology and cosmogony that came to form part of the literature of the Qabbalah. It describes God's creation of the world by means of the ten cosmic numbers (*sefirot*) and the twenty-two letters of the Hebrew alphabet (Gruenwald 1971). Scholars differ widely regarding the date of its composition. Gershom Scholem (1965, 158–204) believed it was written in Palestine in the Tannaitic period (second to third centuries C.E.) with some post-Talmudic additions, whereas Bravmann (1934, 29) and Allony (1972; 1982b; 1982a) argued that it was composed in the eighth or ninth century, due to the fact that it contains features that he identified as the result of influence from Arabic grammatical thought in the Islamic period.

The fact that *Sefer Yeṣira* is already referred to in the *Baraita d-Shmuel* and the poems of Eleazar ha-Kallir (c. sixth century) (Scholem 2007, 330) suggests that such passages are later additions to the original work. Weinstock (1972) argues that a variety of historical layers can be identified in the text, ranging from the Tannaitic period until the tenth century C.E. Hayman (2004, 5) also identifies layers in the text, but is reluctant to accept the early dating of Weinstock.

The work is extant in two main versions, one short and one long, without major divergences in ideas between them. On account of its focus on letters of the Hebrew alphabet, the work is of some importance for the history of the Hebrew language. It contains, for example, a classification of the letters according to their places of articulation in the mouth. It is not accurate, however, to identify the work as the first composition on Hebrew grammar and orthography, as was proposed by Mordell (1914). The inclusion of the letter *resh* together with בגדכפת in a list of the letters that have hard and soft realizations has been interpreted as reflecting a Babylonian rather than Tiberian tradition of pronunciation (Morag 1960). Numerous commentaries were written on work from the tenth century onwards, which made expositions of its laconic and enigmatic text. It is in some of these commentaries that one can find information about the Tiberian reading tradition. The two extant commentaries that are relevant in this respect are those of Saadya Gaon and Dunash ibn Tamīm, both written in the tenth century in Arabic. Saadya wrote a philosophical commentary on the long version of *Sefer Yeṣira* in 931

when he was Gaon in Iraq (ed. Lambert 1891). As has been remarked, Saadya was familiar with the Tiberian reading tradition and makes reference to it in several places in this commentary. ʾAbū Sahl Dunash ibn Tamīm made a commentary on the short version in 955/6 in Kairouan. Fragments of the Arabic original have been discovered in the Genizah (Vajda 1954; 1963). Several later revisions were made, mainly in Hebrew (e.g. ed. Grossberg 1902). The commentary is apparently based on the lectures of Dunash's teacher, Isaac Israeli, who is said to have known the Tiberian reading tradition.

I.0.13.6. Non-Standard Tiberian Systems of Vocalization

There are a variety of extant medieval manuscripts of the Hebrew Bible that are vocalized with Tiberian signs but do not follow the standard Tiberian system of vocalization. These manuscripts exhibit numerous differences among themselves, though certain tendencies are observable. Some of the differences from the standard Tiberian vocalization can be interpreted as reflecting stages of development different from the one exhibited by the standard system, some more primitive and some more advanced, in particular in the use of the *dagesh, rafe, shewa* and *ḥaṭef* signs.[142] Other differences from standard Tiberian reflect a different pronunciation tradition, the most conspicuous feature being the interchange of *segol* and *ṣere*, on the one hand, and *pataḥ* and *qameṣ*, on the other. Manuscripts exhibiting such interchanges have been interpreted as reflecting the Palestinian

[142] See Khan (1991, 856; 2017b).

pronunciation tradition, since similar interchanges are found in manuscripts with Palestinian vocalization. The interchanges are, however, inconsistent across the extant manuscripts and they appear to reflect a variety of types of pronunciation with minor differences.

The Non-Standard Tiberian type of vocalization has been found in biblical manuscripts written in medieval Europe, in both Ashkenaz and Italy.[143] The best known European biblical manuscript of this type is Codex Reuchlinianus, written in Karlsruhe in 1105 CE.[144] A range of manuscripts with Non-Standard Tiberian vocalization that were written in the Middle East were discovered in the Cairo Genizah by Kahle (1930, vol. 2), who published descriptions of some of them. Descriptions of other Genizah fragments were subsequently made by other scholars, in particular Díez Macho (1956; 1963; 1971), Murtonen (1961) and Revell (1969). Further work has been carried out by Blapp (2017; 2018) and Arrant (2020) on the Bible fragments with Non-Standard Tiberian vocalization from the Genizah at the University of Cambridge.

The wide distribution of the non-standard type of Tiberian vocalization in many medieval manuscripts written in Europe led Kahle to believe that it must have been associated with a major

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[143] See Sperber (1956-1959). Additional manuscripts of this type from Italy are described by Pilocane (2004).

[144] Cod. Reuchlin 3 of the Badische Landesbibliothek in Karlsruhe; cf. Sperber (1956-1959), Morag (1959). This type of vocalization is also found in liturgical manuscripts from medieval Ashkenaz (Eldar 1978) and some manuscripts of the Mishnah (Heijmans 2013b).

stream of Masoretic tradition that is traceable in the Masoretic sources. A common feature of the manuscripts is the vocalization with *ḥireq* before *yod* in contexts such as לִישְׂרָאֵל where standard Tiberian generally has *shewa* followed by *yod* with *ḥireq* (לְיִשְׂרָאֵל). As we have seen, this is recorded in Masoretic treatises as a distinctive practice of Ben Naftali. For this reason, Kahle held that this vocalization type was associated with the tradition of Ben Naftali.[145] In reality, however, the manuscripts with Non-Standard Tiberian vocalization contain numerous features that are not attributed to Ben Naftali or Ben Asher in the Masoretic lists, such as the extended use of *dagesh* and *rafe* and the interchange of *qameṣ* and *pataḥ*, on the one hand, and *segol* and *ṣere*, on the other. The attribution of the system to the Ben Naftali school was subsequently followed by Prijs (1957). Díez Macho (1956; 1963) maintained that the vocalization had its roots in the Ben Naftali school but had undergone further development, and so he terms it 'Pseudo-Ben Naftali'. Morag (1959) argues against the attribution of the system to the Ben Naftali school and terms it 'Fuller Palestinian'. Dotan (2007, 645) believed that the vocalization was a continuation of the Palestinian vocalization. Allony (1964) termed the vocalization 'Palestino-Tiberian' on account of the fact that in many cases, as remarked, they reflect a Palestinian type of pronunciation. It is known that this type of pronunciation existed in medieval Ashkenaz before the fourteenth century. The term Palestino-Tiberian has been widely accepted (Eldar 1978;

[145] He was following in this respect the identification by Delitzsch of the non-standard features of the Codex Reuchlinianus with the Ben Naftali tradition; see Baer and Delitzsch (1890, ix) and Ginsburg (1897, 640).

Heijmans 2013b). Yeivin (1980; 1983), however, preferred the term 'Extended Tiberian,' on account of the fact that the vocalization system in many of the manuscripts extends some of the principles found in the standard Tiberian vocalization, such as the use of the *dagesh, rafe* and *ḥaṭef* signs. It is this development of principles of standard Tiberian vocalization as well as the reflection of these principles in a less advanced stage of development in the corpus of Non-Standard Tiberian manuscripts that will be of particular interest to us in this book. I shall refer to the various vocalization systems of this type by the generic term Non-Standard Tiberian, following Blapp (2017, 2018) and Arrant (2020).

Despite the wide attestation of the Non-Standard Tiberian system of vocalization in manuscripts written in the Middle East that are preserved in the Genizah and in manuscripts written Europe in the High Middle Ages, in both Ashkenaz and Italy,[146] it never had the same status as the standard Tiberian system and it eventually fell into disuse. The existence of large numbers of manuscripts with Non-Standard Tiberian vocalization indicates that during the Masoretic period and for a period of time immediately following it, a pluriformity of Tiberian vocalization existed. Within this pluriformity the standard Tiberian system was regarded as the most prestigious, due to its association with the oral traditions of the Masoretic authorities, but there was no systematic attempt to replace the Non-Standard Tiberian sign systems. Indeed many of the manuscripts with Non-Standard

[146] See Sperber (1956-1959). Additional manuscripts of this type from Italy are described by Pilocane (2004).

Tiberian vocalization have a monumental codicological form (Arrant 2020). It was only after the primary base of authority passed from the oral traditions of the Masoretes to the written vocalization that textualized these traditions that the standard Tiberian vocalization gradually began to replace the Non-Standard Tiberian sign systems, and indeed also other non-Tiberian sign systems.

I.0.13.7. The Tiberian Reading Tradition in Babylonian Vocalization

As remarked (§I.0.9.), due to the prestige of the Tiberian reading tradition, there was a tendency for other reading traditions to converge with it. As a result, non-Tiberian systems of vocalization were sometimes used in manuscripts to represent the Tiberian tradition. The vocalization in such manuscripts cast light on several aspects of Tiberian pronunciation. Of particular importance are manuscripts that represent the Tiberian tradition with a system of Babylonian signs known as 'compound Babylonian vocalization'. The 'compound system' of Babylonian vocalization distinguished between long and short vowels, in that it marked short vowels in open and closed syllables by the use of different signs from those used to indicate long vowels. This system, therefore, is helpful for the reconstruction of vowel length. The longest and best known extant manuscript that represents the Tiberian reading with this compound system of Babylonian signs is the manuscript I Firkovitch Evr. I B 3 of the National Library of Russia, which is generally known as Codex Babylonicus Petropolitanus. This was published in facsimile by Strack

(1876) and is a major source for the reconstruction of Tiberian pronunciation (see, for example, A. Ben-David 1957a).

I.0.13.8. Tiberian Signs Used to Represent Other Languages

In the Middle Ages, Tiberian vocalization signs were used in manuscripts written in a variety of Jewish languages other than the canonical biblical languages of Hebrew and Aramaic. Those emanating from the medieval Middle East include manuscripts in Judaeo-Arabic (Blau and Hopkins 1985; Khan 1992a; 2010; 2017a), Judaeo-Persian (Shaked 1985, 35–37) and Judaeo-Greek (de Lange 1996). Of particular importance in this context are the medieval vocalized Judaeo-Arabic manuscripts, since many of these reflect the use of the vocalization signs with the phonetic and syllabic value that they had in the Tiberian reading tradition. This indicates that they were written when the Tiberian pronunciation was still a living tradition. Many of these vocalized Judaeo-Arabic manuscripts have been preserved in the Cairo Genizah. The vowel signs in vocalized Judaeo-Arabic manuscripts from the later Middle Ages, by contrast, do not reflect the Tiberian pronunciation, since by that period it had fallen into oblivion.

I.1. CONSONANTS

I.1.1. ʾ*ALEF* אָ֫לֶף (א)

Glottal plosive [ʔ]

Consonantal ʾ*alef* occurs in the following contexts:

> In the onset of a syllable at the beginning of a word, e.g. אָמַ֣ר [ʔɔːˈmaːaʀ̟] 'he said' (Gen. 3.16), אֱלֹהִ֑ים [ʔɛloːˈhiːim] 'God' (Gen. 1.1).

> In the onset of a syllable in the middle of a word after a silent *shewa*, e.g. וַיִּבְאַ֣שׁ [vaɟɟivˈʔaːaʃ] 'and it became foul' (Exod. 7.21).

> In the onset of a syllable in the middle of a word after a vowel, a *ḥaṭef* vowel or vocalic *shewa*, e.g. יָבִ֫יאוּ [jɔːˈviːʔuː] 'they bring' (Exod. 16.5), אֲאַזֶּרְךָ֖ [ʔaʔazzɛrˤˈχɔː] 'I gird you' (Isa. 45.5) מְאֹ֑ד [moˈʔoːoð] 'very' (Gen. 1.31).

> In the coda of a syllable in the middle of a word, e.g. וַיֶּאְסֹ֤ר [vaɟɟɛʔˈsoːorˤ] 'and he tied' (Gen. 46.29).

In the Standard Tiberian tradition consonantal ʾ*alef* in the middle of a word between vowels is marked with *dagesh* in four places:

(i) וַיָּבִ֫יאּוּ ל֑וֹ 'and they brought to him' (Gen. 43.26)

(ii) וַיָּבִ֣יאּוּ לָ֔נוּ 'and they brought to us' (Ezra 8.18)

(iii) תָּבִ֣יאּוּ ׀ לֶ֖חֶם 'you shall bring bread' (Lev. 23.17)

https://doi.org/10.11647/OBP.0163.01

(iv) לֹ֣א רֻאּֽוּ ‘they were not seen’ (Job 33.21)

These four cases are specified in Masoretic treatises and Masoretic notes. They are referred to, for example, in the Masoretic treatise *Hidāyat al-Qāriʾ*:[1]

> It has been said that *dagesh* is placed in *ʾalef* in some specific places in Scripture, namely in the following four cases: וַיָּבִ֥יאּוּ ל֛וֹ אֶת־הַמִּנְחָ֥ה ‘and they brought him the present’ (Gen. 43.26), וַיָּבִ֨יאּוּ לָ֜נוּ כְּיַ֣ד־אֱלֹהֵ֗ינוּ ‘and they brought to us by the hand of our God’ (Ezra 8.18), מִמּוֹשְׁבֹ֨תֵיכֶ֜ם תָּבִ֣יאּוּ ׀ ‘from you dwellings you shall bring’ (Lev. 23.17), וְשֻׁפּ֥וּ עַ֝צְמֹתָ֗יו לֹ֣א רֻאּֽוּ ‘and his bones, which were not seen, are laid bare’ (Job 33.21).

Some examples of references to the four places in Masoretic notes include the following:

> ג׳ אלפין דגשין בלישנא וסימנהון ממושבתיכם תבטאו לחם תנופה, יביאו לו את המנחה אשר בידם, ויביאו לנו, וחד בלשו׳ אחר ושפו עצמותיו לא ראו

> There are three occurrences of *ʾalef* with *dagesh* in a particular lexical item (viz. derivatives of the root בוא ‘to come’), these being in the verses מִמּוֹשְׁבֹ֨תֵיכֶ֜ם תָּבִ֣יאּוּ ׀ לֶ֣חֶם תְּנוּפָ֗ה שְׁ֚תַּיִם ‘You shall bring from your dwellings two loaves of bread to be waved’ (Lev. 23.17), וַיָּבִ֥יאּוּ ל֛וֹ אֶת־הַמִּנְחָ֥ה אֲשֶׁר־בְּיָדָ֖ם ‘they brought to him the present which they had in their hand’ (Gen. 43.26), וַיָּבִ֨יאּוּ לָ֜נוּ ‘they brought to us’ (Ezra 8.18), and one (case of *ʾalef* with *dagesh*) in another word,

[1] Long version, edition in vol. 2 of this book, §II.L.1.3.2.

(in the verse) וְשֻׁפּוּ עַצְמוֹתָיו לֹא רֻאּוּ 'and his bones which were not seen stick out' (Job 33.21).[2]

חד מן ד׳ אלפין דגשין בקרי׳

One of four *ʾalefs* with *dagesh* in Scripture.[3]

These show that the occurrence of *dagesh* in *ʾalef* in these specific places was fixed in the Tiberian tradition. In some of the early Standard Tiberian codices, however, *dagesh* is marked in *ʾalef* also elsewhere in addition to these canonical four places. This applies even to L, where it occurs in the following two additional places:[4]

L: Ruth 2.10: וְאָּנֹכִֽי 'and I' (A: וְאָנֹכִֽי)

L: Ruth 2.11: וַתַּֽעַזְבִ֞י אָּבִ֣יךְ 'and you left your father' (A: וַתַּֽעַזְבִ֞י אָבִ֣יךְ)

These two additional occurrences of *dagesh* in *ʾalef* in L are not referred to in the Masoretic notes, which indicates that they were not canonical in the Tiberian tradition. In the manuscript C there are numerous additional cases of *ʾalef* marked with *dagesh*, none of which are referred to in the Masoretic notes (Yeivin 1980, 285), e.g.

C: Hag. 1.1: שְׁאַּלְתִּיאֵל֙ 'Shealtiel' (L [BHS]: שְׁאַלְתִּיאֵל֙)

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[2] Ginsburg (1880, §5), source: Masora magna in British Library, Harley 1528 (fourteenth century, Spain).

[3] Ginsburg (1905, 2), source: Masora magna in the Second Rabbinic Bible (Venice 1516–17, Bomberg) to Lev. 23.17, Job 33.21 and Ezra 8.18.

[4] I am grateful to Ben Kantor for drawing these to my attention.

C: Jer. 38.12: בְּלוֹאֵ֫י ‘rags’ (L [BHS]: בְּלוֹאֵ֫י)

C: Isa. 51.19: קֹֽרְאֹתַ֫יִךְ ‘the things that befall you’ (L [BHS]: קֹֽרְאֹתַ֫יִךְ)

Ginsburg (1905, 2) draws attention to the existence of some Masoretic notes in European manuscripts that refer to a greater number of instances of *dagesh* in *ʾalef* than the canonical four. These must reflect the awareness of a greater extent of marking the *dagesh* in some manuscripts.

In manuscripts with Non-Standard Tiberian vocalization, the marking of *dagesh* in consonantal *ʾalef* is very frequent. In the Codex Reuchlinianus this is the general rule with only a minority of exceptions. In the single verse Isa. 37.33, for instance, we find: אָּמַר ‘he said’ (L [BHS]: אָמַ֣ר), אֶּל ‘to’ (L [BHS]: אֶל), אַּשּׁוּר ‘Assyria’ (L [BHS]: אַשּׁוּר) (Morag 1959, 218). There is frequent marking of *dagesh* in *ʾalef* also in manuscripts with Non-Standard Tiberian manuscripts written in the Middle East. In some of the Genizah fragments described by Blapp (2017), for example, the marking is as regular as in Codex Reuchlinianus. The following are a few selected examples from T-S A12.1 (Blapp 2017, 83):

אִּמּוֹ (T-S A12.1 | L [BHS]: אִמּ֑וֹ Prov. 29.15 ‘his mother’)

אַּשְׁרֵהוּ (T-S A12.1 | L [BHS]: אַשְׁרֵֽהוּ Prov. 29.18 ‘happy is he’)

אָּץ (T-S A12.1 | L [BHS]: אָ֭ץ Prov. 29.20 ‘he who is hasty’)

בֶּאֱּמֶת (T-S A12.1 | L [BHS]: בֶּאֱמֶ֣ת Prov. 29.14 ‘truthfully’)

כִּסְאּוֹ (T-S A12.1 | L [BHS]: כִּ֝סְא֗וֹ Prov. 29.14 ‘his throne’)

יִרְאּוּ (T-S A12.1 | L [BHS]: יִרְאֽוּ Prov. 29.16 ‘they will see’)

בְּאֵ֣ין (T-S A12.1 | L [BHS]: בְּאֵ֣ין Prov. 29.18 'where there is not')

The motivation to mark the *dagesh* in the four canonical places in the Standard Tiberian tradition was, it seems, to ensure that the consonantal *ʾalef* was pronounced correctly and was not slurred over (Yeivin 1978, 1980, 285). The forms וַיָּבִ֧יאּוּ ל֛וֹ (Gen. 43.26), וַיָּבִ֨יאּוּ לָ֜נוּ (Ezra 8.18) and תָּבִ֣יאּוּ ׀ לֶ֣חֶם (Lev. 23.17) are distinguished from other instances of similar forms of this verb in the biblical corpus by having a conjunctive accent followed by a word with an accent on the initial syllable. This is the context in which *deḥiq* occurs when the final vowel of the first word is *qameṣ* or *segol*, in which there is a fast reading and compression of the syllable between the two accents (§I.I.2.8.1.2.). They also exhibit the sequence of two adjacent high vowels [iː—uː] separated by *ʾalef*. It is likely, therefore, that the consonantal *ʾalef* was considered to be particularly in danger of being slurred over in such a context. Another common feature of these three cases is the occurrence of the sonorant consonant *lamed* at the beginning of the second word. The *ʾalef* in רֻאּֽוּ (Job 33.21) was evidently considered to be in danger of losing its pronunciation and being read as a glide between the two high [uː] vowels.

The greater number of occurrences of *dagesh* in *ʾalef* in some of the model Tiberian codices, especially C, reflects the extension of this principle to other cases of consonantal *ʾalef* that were considered to be at risk of being misread. Still further extension of this practice is found in some manuscripts with Non-Standard Tiberian vocalization, in which the marking of *dagesh* has become virtually regular.

The question arises as to whether this *dagesh* in *ʾalef* marked gemination or not. Some modern scholars have interpreted it as a sign to distinguish the consonantal realization of the *ʾalef* from cases where it does not have consonantal realization (e.g. Morag 1959, 218–19, 1960, 208 n.6, 1963, 5–6). It would, therefore, be equivalent to a *mappiq* on the letter *he*, which distinguishes final consonantal *he* from final *he* that is a vowel letter, rather than a marker of gemination. A statement in *Hidāyat al-Qāriʾ* appears to support this interpretation:

> If it were said: Surely the *dagesh* in some of the four letters of this place (i.e. the letters אהחע), namely in the *ʾalef* in the four passages that you have just mentioned, disproves your statement that *dagesh* is not put on the letters of this place of articulation, the response would be: If one examines carefully the so-called *dagesh* in the *ʾalef* in these four passages, one sees that it is not *dagesh*, since the speaker strives to introduce heaviness into it, but it is not made heavy.[5]

There is, however, evidence for the gemination of the *ʾalef* in some early Karaite sources. Yūsuf ibn Nūḥ, a Karaite scholar active in the second half of the tenth century, in his grammatical commentary known as the *Diqduq* compares the *dagesh* in the forms וַיָּבִ֥יאוּ ל֣וֹ (Gen. 43.26) and וַיָּבִ֫יאוּ לָ֫נוּ (Ezra 8.18) to the *dagesh* that occurs in other forms due to the preceding stress:

> תְּהָתֵ֖לּוּ בֽוֹ (Job 13.9): … The *dagesh* that occurs in the *lamed* has arisen due to the fact that the stress lengthens (the syllable beginning with) the *tav*, resulting in תְּהָתֵ֖לּוּ בֽוֹ ‘you

[5] Long version, edition in vol. 2 of this book, §II.L.1.3.5.

> deceive him'. This conforms to what we have stated before, with regard to the occurrence of *dagesh* in some places when the stress lengthens what precedes, for example אֶֽל־מֹשֶׁ֥ה לֵּאמֹֽר 'to Moses saying' (Exod. 6.10), וַיֹּאמְר֣וּ לֹּ֔א 'and they said "No"' (Gen. 19.2), וַיָּבִ֨יאּוּ לָ֜נוּ (Ezra 8.18) and וַיָּבִ֥יאּוּ ל֛וֹ (Gen. 43.26). The word וַיָּבִ֥יאּוּ is like תְּהָֽתֵּ֫לּוּ, in that the stress and the *dagesh* occur within the same word.[6]

This passage implies that the *dagesh* in the *ʾalef* indicates gemination in the same way as the *dagesh* in תְּהָֽתֵּ֫לּוּ. Ibn Nūḥ makes the following statement about the form רֻאּ֥וּ (Job 33.21):

> The imperative of this is רֵאֵּה, like כֵּסֵּה and שֵׁפֵּה.[7]

In Ibn Nūḥ's system of grammar, the imperative form is the morphological base of derivations. This statement indicates that רֻאּ֥וּ has the morphological base רֵאֵּה and that this has the same pattern as כֵּסֵּה and שֵׁפֵּה, which are the bases of the forms יְכֻסֶּֽה 'it is covered' (Ecc. 6.4), וְשֻׁפּ֥וּ 'and they stick out' (Job 33.21) with medial gemination.

In a Karaite transcription of לֹ֣א רֻאּ֥וּ (Job 33.21) into Arabic script, an Arabic *shadda* sign is written over the *ʾalif* that transcribes the *ʾalef* with the *dagesh*:

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[6] תהתלו בו: ... ואלדגש אלדי וקע פי אללאם הו מן גהה אנה מד אלטעם פי תָו ככ֗ תְּהָֽתֵּ֫לּוּ בו: והו כמא קלנא אנה יעמל פי בעץ֗ אלמואצ֗ע דגש ענד מא ימֵּד אלטעם פי מא תְּהָֽתֵּ֫לּוּ מתל וַיָּבִ֥יאּוּ צאר ויאמרֻ֣ו לֹּ֔א: ויבִ֨יאּוּ לָ֜נוּ: וַיָּבִ֥יאּוּ ל֛וֹ קבלה נט֗יר אל מֹשֶׁ֥ה לֵּאמֹֽר: פי אלכלמה אלואחדה ואל דגש במא צאר מד אלטעם, *Diqduq* (ed. Khan 2000b, 369).

[7] אמרה רֵאֵּה מתל כֵּסֵּה שֵׁפֵּה, *Diqduq* (ed. Khan 2000b, 399).



رُآّو (BL Or 2552 fol. 51r, 1 | L [BHS]: רֻאּֽוּ Job. 33.21 'they were [not] seen')

This manuscript, which is datable to the tenth or eleventh century, elsewhere uses the *shadda* sign only to mark *dagesh forte*. This is clear evidence, therefore, that the *ʾalef* was being read as geminate.

The interpretation of the *dagesh* in *ʾalef* as a marker of gemination rather than a *mappiq* is reflected also by a statement in a Hebrew Masoretic treatise:

> Moreover, three of the four (i.e. the four letters אהחע) have a single fixed type (of pronunciation), which is less than all the (other) letters, (namely) העח are deprived of taking *dagesh*.[8]

The implication of the passage is that *ʾalef*, unlike the other guttural letters, does indeed take *dagesh*.

Returning to the passage from *Hidāyat al-Qāriʾ* cited above, a close reading of this reveals that the author is not saying that the point in the *ʾalef* is simply a *mappiq* indicating consonantal realization. Rather the reader 'strives to introduce heaviness into

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[8] ועוד שלשה מן הארבעה, דרך אחד להם קבועה, מכל האותיות גרועה, הע״ח מן הדגשה פרושים (Baer and Strack 1879, 5).

it, but it is not made heavy', i.e. the reader intends to read it as a *dagesh forte*, but the muscular tension normally associated with *dagesh forte* is not achieved due to its articulation in the larynx. The articulation of the *ʾalef* could, nevertheless, have been held for a longer duration.

In some manuscripts with Babylonian vocalization, the *dagesh* sign is marked on consonantal *ʾalef* in a wide variety of words (Yeivin 1985, 265–66). It is significant that *mappiq* on final *he* is represented by a different sign (Yeivin 1985, 335–36), suggesting that the *dagesh* in the *ʾalef* did not have the function simply of *mappiq* but rather indicated gemination.

In some of the reading traditions that have continued down to modern times in Jewish communities in the Middle East, the *ʾalef* with *dagesh* in the four canonical places is indeed still read as a geminate *ʾalef*, e.g. Aleppo (Katz 1981, 16), Baghdad (Morag 1977, 14), Yemen (Morag 1963, 5–6). Transcriptions of the Aleppo tradition, following Katz (1981, 16) are as follows:

Gen. 43.26: [ˌvajjaˈβiʔˈʔu]

Ezra 8.18: [vᵃjaˈβiːʔˌʔu]

Lev. 23.17: [taˈβiʔˈʔu]

Job 33.21: [ˈruʔˈʔu]

These traditions of reading the *ʾalef*s need not be interpreted as late interpretations of the point in the *ʾalef*, as Morag (1977, 14) argues, but rather continuities of medieval traditions.

In sum, the weight of evidence suggests that the *dagesh* point in *ʾalef* in the four canonical places in the Standard Tiberian

tradition indicated gemination of the *ʾalef*, and so should be transcribed [vaɟɟɔːˈviːiʔʔuː], [tʰɔːˈviːiʔʔuː], [ʀ̟uʔˈʔuː]. The gemination was an orthoepic strategy that involved pronouncing the *ʾalef* with additional effort to ensure that it was not slurred over.

Within the Tiberian Masoretic tradition there are a number of pairs of identical lexical words, many of them in parallel passages, one of which has preserved the consonantal *ʾalef* whilst the other has lost it both in the *ketiv* and in the *qere*,[9] e.g.

תוֹמִ֫ם (Gen. 25.24) — תְאוֹמִ֫ים (Gen. 38.27) 'twins'

וּפֻוָּ֫ה (Gen. 46.13) — וּפוּאָ֫ה (1 Chron. 7.1) 'and Puah'[10]

וַתַּזְּרֵ֫נִי (2 Sam. 22.40) — וַתְּאַזְּרֵ֫נִי (Psa. 18.40) 'you did gird me'

הַבֵּ֫רֹתִ֫י (1 Chron. 11.39) — הַבְּאֵ֫רֹתִ֫י (2 Sam. 23.37) 'of Beeroth'

לַהְשׁ֫וֹת (2 Kg. 19.25) — להַשְׁאֶ֫וֹת (Isa. 37.26) 'to cause to crash into ruins'

וַיְרַפּ֞וּ (Jer. 8.11) — וַֽיְרַפְּא֞וּ (Jer. 6.14) 'and they have healed'

In some biblical scrolls from Qumran, an *ʾalef* that is pronounced consonantal in the Tiberian Masoretic tradition is omitted in the orthography, indicating that it had lost its consonantal

[9] These are listed in the Masora, e.g. Ginsburg (1880, §16a).

[10] In the Non-Standard Tiberian manuscript BL Add MS 21161, fol. 250v this word is vocalized וּפֻּוָֽאָה֯, which appears to be a hybrid form of וּפֻוָּ֫ה and וּפוּאָ֫ה.

pronunciation. This is particularly common in the scroll 1QIsa[a], but is found also occasionally elsewhere, e.g.[11]

משריך (1QIsa[a] 3.17 | L [BHS]: מְאַשְּׁרֶ֫יךָ Isa. 3.12 'your guides')

נספים (1QIsa[a] 11.14 | L [BHS]: נֶאֱסָפִ֔ים Isa. 13.4 'gathered [mpl]')

ומלו (1QIsa[a] 12.23 | L [BHS]: וּמָלְא֥וּ Isa. 14.21 'and [the surface of the world] will be filled')

וישמו (1QIsa[a] 19.3 | L [BHS]: וַיֶּאְשְׁמ֖וּ Isa. 24.6 '[and its inhabitants] pay the penalty')

טלים (1QIsa[a] 33.11 | L [BHS]: טְלָאִ֔ים Isa. 40.11 'lambs')

תנתו (1QIsa[a] 29.25 | L [BHS]: תְּאֵנָת֔וֹ Isa. 36.16 'his fig tree')

הביו (1QIsa[a] 13.19 | L [BHS]: *ketiv* הביאו *qere* הָבִ֣יאִי Isa. 16.3 'give [fs advice]!')

בוו (4Q141 f1i.12 | L [BHS]: בָּ֔אוּ Deut. 32.17 'they came')

אליב (4Q138 f1.13 | L [BHS]: אֱלִיאָב֒ Deut. 11.6 'Eliab')

נוות (4Q78 f10–12.7 | L [BHS]: נְא֣וֹת Joel 1.19 'pastures of')

הרץ (4Q79 f1–2.9 | L [BHS]: הָאָ֑רֶץ Hos. 2.2 'the earth')

In living reading traditions that have survived down to modern times in Jewish communities in the Middle East a consonantal *ʾalef* is general pronounced, but is sometimes elided, especially between vowels, e.g.

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[11] Data supplied by Aaron Hornkohl.

Aleppo

haˈele (Katz 1981, 15 | L [BHS]: הָאֵ֫לֶּה Gen. 48.1 'these')

Baghdad

wearbaˈʕɪm (Morag 1977, 13 | L [BHS]: וְאַרְבָּעִ֖ים Gen. 47.28 'and forty')

Yemen

bᵓɔˈħiːw (Morag 1963, 3 | L [BHS]: בְּאָחִ֖יו Isa. 19.2 'against his brother')

Morocco

israˈil (Akun 2010, 65 | L [BHS]: יִשְׂרָאֵ֔ל Exod. 14.30 'Israel')

The variants within the Masoretic tradition and the loss of *ᵓalef* in the Qumran scrolls and modern living traditions reflect the vulnerability of consonantal *ᵓalef* to weakening in reading traditions, which would have motivated orthoepic measures being taken to ensure their correct reading.

In the model Standard Tiberian manuscripts *ᵓalef* that does not have a consonantal realization is sometimes marked with a *rafe* sign, e.g.

L: רֹאשִׁ֑י 'my head' (Psa. 40.13)

L: לֹ֥א יָרֵ֖אנוּ 'we do not fear' (Hos. 10.3)

It is regularly marked in L on *ᵓalef* between two vowels that is not read as consonantal, e.g.

L: פְּתָאיִ֣ם (Psa. 116.6) 'the simple'

L: עֳפָאיִ֗ם (Psa. 104.12) 'branches'

L: וְכִצְּבָאִ֥ים (1 Chron. 12.9) ‘and like gazelles’

These words are listed in the Masora as cases where ‘ʾ*alef* is written but not read’.[12]

In some manuscripts with Non-Standard Tiberian vocalization the marking of *rafe* on non-consonantal ʾ*alef* is very frequent, e.g.

Codex Reuchlinianus:

מַשָּׂ֣א (Morag 1959, 218 | L [BHS]: מַשָּׂ֖א Isa. 23.1 ‘oracle’)

יָבֹ֖א (Morag 1959, 221 | L [BHS]: יָב֗וֹא Isa. 37.33 ‘(does not) come’)

Genizah manuscripts

הֲיֹ֣אבֶה (T-S A11.1 | L [BHS]: הֲיֹ֣אבֶה Job 39.9 ‘will it be willing’) (Blapp 2017, 59)

שׂוֹנֵ֣א (T-S A12.1 | L [BHS]: שׂוֹנֵ֣א Prov. 29.24 ‘he who hates’) (Blapp 2017, 99)

וְלֹ֣א (T-S A12.1 | L [BHS]: וְל֣א Prov. 29.24 ‘and not’) (Blapp 2017, 99)

In Non-Standard Tiberian manuscripts, ʾ*alefs* that are non-consonantal in the Standard Tiberian tradition are occasionally marked with *dagesh*. In some cases where the ʾ*alef* occurs word-internally, it is possible that these reflect consonantal readings of the ʾ*alef*, e.g.

עֳפָּאִים (BL Add MS 21161, fol. 160v | L [BHS]: עֳ֝פָאיִם Psa. 104.12 ‘branches’)

[12] Ginsburg (1880, §13).

יִשְׁמָֽעֵאֿל (Codex Reuchlianus | L [BHS]: יִשְׁמָעֵ֫אל Jer. 40.14 'Ishmael')

It is sporadically, however, marked on a word-final *ʾalef*, which must have been read as non-consonantal, e.g.

נָ֣אֿ (T-S NS 248.2, Arrant 2020 | L [BHS]: נָ֣א Gen. 13.9 'please')

וַיִּשָּׂאֿ (T-S NS 248.2, Arrant 2020 | L [BHS]: וַיִּשָּׂא Gen. 13.10 'and he lifted')

תִּירָ֣אֿ (T-S NS 248.2, Arrant 2020 | L [BHS]: תִּירָ֣א Gen. 15.1 '[do not] be afraid')

In a few model Tiberian codices a *rafe* is marked on an *ʾalef* in the word יִשְׂרָאֵל where it would be expected to be consonantal, e.g.

C: בְּיִשְׂרָאֵֿל, L [BHS]: בְּיִשְׂרָאֵ֑ל 'in Israel' (1 Sam. 3.11)

Yeivin (1978, 226) suggests that this phenomenon in the model manuscripts may indicate that in this proper name the *ʾalef* was not pronounced as consonantal, i.e. [jisrˤɔːˈeːel].[13]

The marking of *rafe* on consonantal *ʾalef* is attested sporadically also in manuscripts with Non-Standard Tiberian vocalization, e.g.

אֿנֹכִ֣י (T-S A12.1, Blapp 2017, 99 | L [BHS]: אָנֹכִ֣י Prov. 30.2 'I')

[13] A possible parallel to this elision of the *ʾalef* can be identified in the proper name דָּנִיֵּאל [dɔːnijjeːel] 'Daniel' < **dānī-ʔēl*. Yeivin notes that in both names the *ʾalef* is followed by the letter *lamed*.

בְּקָֽרְאִֿ֗י (T-S A13.20, Blapp 2017, 174 | L [BHS]: בְּקָֽרְאִ֗י Psa. 69.4 ‘with my crying’)

In Non-Standard Tiberian manuscripts that otherwise use *dagesh* extensively in consonantal *ʾalef*, the *ʾalef* in the word ישראל is often marked with *rafe* (Pilocane 2004, 28).

In Biblical manuscripts with Palestinian vocalization, both the *dagesh* sign (בּ) and the *rafe* sign (בֿ) are found marked on consonantal *ʾalef*, e.g.

Dagesh:

שׂאּ[ו] (Bod. Heb. e 30 ff. 48-49 | L [BHS]: שָׁ֨אוּ Isa. 6.11 ‘they lie waste’) (Kahle 1901, 278; Revell 1970a, 77)

Rafe:

וּבֿאֿ[ו] (Bod. Heb. e 30 ff. 48-49 | L [BHS]: וָבֹ֙אוּ Isa. 45.20 ‘and come’) (Kahle 1901, 287; Revell 1970a, 77–78)

It is unlikely that in these cases the marking of the *rafe* reflects the loss of consonantal value of the *ʾalef*. The sign is likely to be intended to signal that the *ʾalef* is consonantal but ungeminated.

In L one encounters vocalizations such as the following:

Num. 26.7: הָֽרְאֿוּבֵנִ֑י (BHS: הָֽרְאוּבֵנִ֑י) ‘the Reubenite’ (B: הָראוּבֵֿנִ֑י, S: הָֽרְאוּבֵֿנִ֑י)

Josh. 12.6: לָֽרְאֿוּבֵנִ֜י (BHS: לָֽרְאוּבֵנִ֜י) ‘to the Reubenite’ (A: לָֽרְאֿוּבֵנִ֜י)

2 Kings 10.33: וְהָֽרְאֿוּבֵנִ֖י (BHS: וְהָֽרְאוּבֵנִ֖י) ‘and the Reubenite’ (A: וְהָראֿוּבֵנִ֖י)

Job 31.7: מֻאֻוּם (BHS: מְאֻוּם) 'blemish' (A: מְאוּם)

Dan. 1.4: מֻאוּםֿ (BHS: מְאוּם) 'blemish' (*qere* note: מוּם)

The way these words appear in BHS, which does not mark *rafe*, would lead one to believe that the *ʾalef* in L is a consonantal *ʾalef* between two vowels. In the manuscripts the *ʾalef* is marked with *rafe* and in manuscripts other than L there is only one vocalization sign, either *qibbuṣ* before the *ʾalef* or a *shureq* dot on the *vav*, indicating that the *ʾalef* did not have a consonantal realization. The vocalization in L adds a *qibbuṣ* sign on the letter preceding the *ʾalef*. This is, therefore, a double marking of the *u* vowel that follows the consonant. The words should be read [hɔːʀ̟uːveːˈniː], [muːum],[14] as shown by other model manuscripts, and also by the *qere* note in Dan. 1.4. The double marking and *qere* note were strategies to ensure that the *u* vowel was pronounced immediately after the consonant.

I.1.2. *BET* בֵּית (ב)

Bet with *dagesh* (בּ): voiced bilabial stop [b]

Bet without *dagesh* (בֿ): voiced labio-dental fricative [v]

A *bet* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

According to *Hidāyat al-Qāriʾ*, the Tiberians called this letter by the name בֵי.[15] This form of the name is also found in

[14] The second [u] is an epenthetic, which is inserted after the long vowel in CVVC syllables (§I.2.4.).

[15] Long version, edition in vol. 2 of this book, §II.L.1.1.2.

other Masoretic treatises, sometimes vocalized בֵי,[16] and the later recensions of *Hidāyat al-Qāriʾ*.[17] It is referred to in Masoretic treatises also as בא.[18] Both of these spellings represent the Arabic name of the letter, viz. *bāʾ*, which is pronounced *bē* due to *ʾimāla* in Arabic dialects (Nöldeke 1910, 131). This form of the name is found in some versions of *Sefer Yeṣira*.[19]

It is stated in *Hidāyat al-Qāriʾ* that the *bet* with *dagesh* is pronounced by closing the lips firmly.[20] In the Karaite transcriptions it is represented by Arabic *bāʾ* (Khan 1990a, 4, 2013).

According to *Hidāyat al-Qāriʾ, bet* with *rafe* is pronounced by closing the lips lightly. Taken by itself, this could be a description of a bilabial articulation of *bet rafe*. This is not confirmed, however, by other sources. The light closure of the lips would have accompanied a labio-dental articulation, and no doubt it is this secondary feature that the author refers to.[21] Elsewhere in the *Hidāyat al-Qāriʾ* it is stated that *bet rafe* and consonantal *vav* have the same pronunciation:

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[16] Allony and Yeivin eds. (1985, 96), Baer and Strack (1879, 7, §6)

[17] Arabic version of *Maḥberet ha-Tījān* (ed. Neubauer 1891, 10), Hebrew version of *Maḥberet ha-Tījān* (ed. J. Derenbourg 1871, 36).

[18] E.g. *Hidāyat al-Qāriʾ* Long version, edition in vol. 2 of this book, §II.L.1.1.1., §II.L.1.1.2.; the treatise on the *shewa* edited by Levy (1936, כו).

[19] Eg. ed. Hayman (2004, 51).

[20] Long version, edition in vol. 2 of this book, §II.L.1.3.9. Eldar (1980, fols. 10b-11a, lines 84-88).

[21] Cf. Eldar's (1980) commentary to this passage, n.75.

> ‘Every [consonantal] *vav* at the end of a word is pronounced, according to the Palestinians, with [the pronunciation of] *bet rafe*.’[22]

This feature is alluded to also in a Masoretic treatise on the *shewa*:

> ‘Know that every *vav* which is prefixed to the beginning of a word and has *shewa* is read with (the pronunciation of) *bet*. … I mean, it is pronounced as if it were the letter *bet*, as in … וְאָמַר “and he shall say.”’[23]

In some Karaite transcriptions into Arabic script, a fricative *bet* is occasionally transcribed by Arabic *wāw* and, vice versa, a Hebrew consonantal *vav* is sometimes transcribed by Arabic *bāʾ*. This is a reflection of the fact that the two sounds were the same, e.g. in the manuscript BL Or 2548:

> عناويم (BL Or 2548 fol. 3r, 10 | L [BHS]: עֲנָבִֽים Isa. 5.4 ‘grapes’)

> وقوبي (BL Or 2548 fol. 42r, 3 | L [BHS]: וְקוֹיֵ֤ Isa. 40.31 ‘those who are hoping for’)

We know from David ben Abraham al-Fāsī that in Palestine consonantal *vav* in these circumstances was pronounced as a

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[22] Long version, edition in vol. 2 of this book, §II.L.1.7.7. Eldar (1984b, Hebrew section, 10).

[23] אעלם אן כל ואו מזאד פי אול ללפטׄה ותחתה שוא יקרא בבא ... אעני יכׄרג כאנה מתׄל חרף בית כקולך ... וְאָמַר (ed. Levy 1936, כו).

labio-dental (see the description of *vav* §I.1.6. for details). It follows, therefore, that *bet rafe* was a voiced labio-dental.

In a few sporadic cases *bet rafe* is represented by Arabic *fāʾ* in the Karaite transcriptions, e.g.

وايزوف (Genizah MS 12, Khan 1990a, 151 | L [BHS]: וְאֵז֖וֹב Num. 19.6 'and hyssop')

The transcription with *fāʾ* reflects the perception that this Arabic sound was close acoustically to the voiced labio-dental [v]. It is common in transcriptions of Hebrew in medieval Muslim sources, e.g.

عرافا (al-Bīrūnī, *Chronology of* Nations, ed. Sachau 1878, 277 | עֲרָבָה 'desert')

لفانه (al-Bīrūnī, *Chronology of Nations*, ed. Sachau 1878, 187–192 | לְבָנָה 'moon')

دافورا (Ibn Khaldūn, Schreiner 1886, 253 | דְּבוֹרָה 'Deborah')

There are a few isolated occurrences of *pe* in place of fricative *bet* in biblical manuscripts from Qumran, which could be taken as evidence that the labio-dental pronunciation existed already in the Second Temple period, e.g.[24]

בפנות (4Q6 f1a.3 | L [BHS]: בִּבְנ֥וֹת Gen. 34.1 '[to visit the] daughters [of the land]')

[24] Data supplied by Aaron Hornkohl.

עפשו (4Q78 f10–12.7 | L [BHS]: עָבְשׁ֣וּ Joel 1.17 ‘[seeds of grain] have shrivelled’)

Similar interchanges of fricative *bet* with *pe* are attested in Jewish Palestinian Aramaic, alongside interchanges with *vav*, e.g. נבטייה ‘the Nabatean’, נפתייה ‘the Nabatean’, ניוותאי ‘the Nabateans’ (Dalman 1894, 74).

Hidāyat al-Qāriʾ describes the stop [b] as one of the primary letters (*ʾuṣūl)* and the [v] as an additional secondary letter (*farʿ*).[25]

I.1.3. *Gimel* גִּ֫ימֶל (ג)

Gimel with *dagesh* (גּ): voiced velar stop [g]

Gimel without *dagesh* (גֿ): voiced uvular fricative [ʁ]

A *gimel* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

In *Hidāyat al-Qāriʾ* the name of this letter is spelt גמאל, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name גִּ֫ימֶל, with stress on the final syllable.[26] In the Hebrew *Maḥberet ha-Tījān*, a later recension of *Hidāyat al-Qāriʾ*, the name has the form גם.[27]

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[25] Long version, edition in vol. 2 of this book, §II.L.1.2.

[26] The spelling גמאל is used by ʾAbū al-Faraj Hārūn also in his grammatical text *al-Kitāb al-Kāfī* (ed. Khan, Gallego and Olszowy-Schlanger 2003, e.g. §I.25.35., §I.25.40., §I.28.2., §I.28.11., §I.28.12.) and by the anonymous Karaite author of the grammatical text *Kitāb al-ʿUqūd* (ed. Vidro 2013, 27, 317).

[27] Ed. Derenbourg (1871, 36).

Gimel with *dagesh* was a stop, which, according to *Hidāyat al-Qāriʾ*, was articulated with the middle of the tongue.[28] The Karaite transcriptions represent it by Arabic *jīm* or, occasionally, by *kāf*,[29] e.g.

هِجَامِيل (BL Or 2539 MS A, fol. 63r, 3 | L [BHS]: הִגָּמֵ֥ל Gen. 21.8 'to be weaned')

كبور (BL Or 2554 fol. 11r, 7 | L [BHS]: גִּבּ֣וֹר Ruth 2.1 'mighty')

These Arabic letters were pronounced respectively as a voiced palatal plosive [ɟ] and an unvoiced velar plosive [kʰ]. This is the pronunciation described by the early Arabic grammarians Sībawayhi and al-Khalīl (eighth century C.E.). Ibn Sīna in the eleventh century describes *jīm* as pronounced slightly further forward.[30] The Karaite transcriptions usually render *gimel* with *dagesh* by Arabic *jīm* due to the latter being a voiced consonantal plosive close to the place of articulation of [g]. It was preferred to *kāf*, which differed from *jīm* in being not only voiceless but also aspirated. It was a general principle of the transcriptions that voiced sounds were transcribed by one that was voiced but of a slightly different place of articulation rather than by an unvoiced letter of the same place of articulation.

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[28] וסט אללסאן, Long version, edition in vol. 2 of this book, §II.L.1.3.7.; Eldar (1980, fols. 10a-10b, lines 61-73).

[29] Khan (1990, 4, 2013).

[30] Roman (1983, 101–6, 218)

Gimel without *dagesh*, on the other hand, was a fricative articulated further back, on 'the posterior third of the tongue, which is adjacent to the pharynx, opposite the (soft) palate.'[31] In the Karaite transcriptions, fricative *gimel* is transcribed by Arabic *ghayn*, which was pronounced as a uvular fricative in the Middle Ages according to the descriptions of the Arabic grammarians.[32]

Hidāyat al-Qāriʾ describes the stop [g] as primary (*ʾaṣl*) and the fricative [ʁ] as secondary (*farʿ*).[33]

I.1.4. *DALET* דָּלֶת (ד)

Dalet with *dagesh* (דּ): voiced post-dental stop [d]

Dalet without *dagesh* (דֿ): voiced post-dental fricative [ð]

A *dalet* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

According to *Hidāyat al-Qāriʾ*, the Tiberians called this letter *dāl*, which is the name of the corresponding Arabic letter.[34]

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[31] תלת אללסאן ממא ילי אלחלקום קודאם אלחנך, Long version of *Hidāyat al-Qāriʾ*, edition in vol. 2 of this book, §II.L.1.3.6.; ed. Eldar (1980, fol. 10a, lines 58-59).

[32] Roman (1983, 218).

[33] Long version, edition in vol. 2 of this book, §II.L.1.3.6.; Eldar (1980, fols. 8b, 10a, 254, n.58). Watson (2007, 43–44) considers the uvular fricative [ʁ] in Modern Arabic dialects to be the emphatic counterpart of the dorsal [g], involving a primary dorsal and non-primary 'guttural' feature.

[34] Long version, edition in vol. 2 of this book, §II.L.1.1.2.

This term is found also in some versions of *Sefer Yeṣira* (דל),[35] and in the later recensions of *Hidāyat al-Qāriʾ*, e.g. Arabic *Maḥberet ha-Tījān* (אלדאל),[36] Hebrew *Maḥberet ha-Tījān* (דׄל).[37]

Hidāyat al-Qāriʾ states that the letter was articulated with 'the extremity of the tongue in combination with the flesh of the teeth', i.e. the gums.[38] Likewise, Saadya describes the place of articulation of *dalet* as being adjacent to the inside of the upper teeth.[39] When the letter had *dagesh,* the tongue was pressed firmly against the gums. When it was without *dagesh,* the tongue was pressed lightly against the gums. Both forms of the letter were articulated in the same place. The term 'end of the tongue' could include both the tip and the blade. Most versions of *Sefer Yeṣira* state that *dalet* was articulated with 'the beginning of the tongue',[40] but this is equally vague. The Spanish grammarian Ibn Janāḥ (eleventh century) specifies that it was articulated with the

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[35] E.g. ed. Gruenwald (1971, 156), ed. Hayman (2004, 54).

[36] Ed. Neubauer (1891, 12).

[37] Ed. Derenbourg (1871, 36).

[38] טרף אללסאן מע לחם אלאסנאן, Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, ed. Eldar, 1980-81, lines 67-69).

[39] ופי דטלנת ... אנהא תגׄאור אלאסנאן מן דׄלך מן אעלאהא; Saadya, *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 75).

[40] בראש הלשון (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98). According to Morag (1960), however, the phonetic descriptions in *Sefer Yeṣira* reflect the pronunciation of Hebrew in Babylonia, so it must be used with caution when reconstructing the Tiberian pronunciation tradition.

blade of the tongue and not the tip.[41] This corresponds to the description in one version of *Sefer Yeṣira*, where it is stated that the letters דטלנת were articulated with the 'middle' of the tongue.[42] It is easier, however, to interpret *Hidāyat al-Qāriʾ* as referring to the contact between the tongue tip and the gums. An articulation with the blade of the tongue with the gums would have involved contact with the teeth.

Hidāyat al-Qāriʾ describes the stop [d] as primary (*ʾaṣl*) and the fricative [ð] as secondary (*farʿ*).[43]

The medieval scholar Isaac Israeli (ninth–tenth centuries C.E.), who had an expert knowledge of the Tiberian reading tradition, is said to have pronounced fricative *dalet* with a secondary 'emphatic' articulation (i.e. pharyngealized with retraction of the tongue root and increased muscular pressure) in two words, viz. אַפַּדְנ֔וֹ 'his palace' (Dan. 11.45) and וַֽיַּדְרְכ֤וּ 'and they have bent' (Jer. 9.2). This was apparently due to the fact that the *pe* and the *resh* in these words were pronounced emphatic (see §I.I.1.17., §I.1.20.) and the emphasis spread to the *dalet*. The evidence for this is found in a commentary to *Sefer Yeṣira* by Dunash ibn Tamim, who was a physician in court of the Fāṭimids in Kairouan, North Africa, in the tenth century C.E. He was the pupil of Isaac Israeli, who also worked as a physician in Kairouan:

[41] פאן דלך אלטרף ליס הו אסלת אללסאן בל מא הו ארפע מן שלאסלה קלילא 'This end (of the tongue) is not the tip of the tongue but what is slightly posterior to the tip'; *Kitāb al-Lumaʿ* (ed. Derenbourg 1886, 28).

[42] דטלנת על חצי הלשון משתמשות, *Sefer Yeṣira* (ed. Hayman 2004, 93).

[43] Long version, edition in vol. 2 of this book, §II.L.1.2., Eldar (1980, fol. 8b, 254, n.58).

> The Arabs have sounds that the Hebrews do not have, namely the *ḍād* of קצ̇יב (*qaḍīb*) and the *ḏ̣āʾ* of עט̇ים (*ʿaḏ̣īm*). The meaning of *qaḍīb* is ‘rod’ or ‘sceptre’. It is written with *ṣade* with a dot above it. It is a distinct sound, which resembles *dalet rafe*. The meaning of *ʿaḏ̣īm* is ‘huge’. It is written with *ṭet* with a dot above it. It is a distinct sound, which resembles *dalet rafe*. … Our master Yiṣḥaq, the son of our master Shlomo, of blessed memory, (i.e. Isaac Israeli) used to say that in the language of the Hebrews among the Tiberians there were (the sounds of) *ḏ̣āʾ* and *ḍād* and he used to read ויטע אהלי אפט̇נו (Dan. 11.45, L: וְיִטַּ֫ע אָהֳלֵ֣י אַפַּדְנ֔וֹ ‘He will pitch the tents of his palace’[44]), in which he used to pronounce *ḏ̣āʾ* although *dalet* was written. He used to read ויצ̇רכו את לשונם (Jer. 9.2, L [BHS]: וַֽיַּדְרְכ֤וּ אֶת־ לְשׁוֹנָ֜ם ‘they bent their tongue’), in which he pronounced *ḍād*, although *dalet* was written. The reason for all this was that he was an expert in the reading of the Tiberians.[45]

Early in the history of Arabic, the distinction between the pronunciation of *ḍād* (ض) and *ḏ̣āʾ* (ظ) broke down. In modern

[44] BHS erroneously reads L as אָהֳלֵ֣י.

[45] ויש אצל הערביים הברות שאינם נמצאות אצל העבריים, והם הצדי מן קצ̇יב והטא מן עט̇ים. פי׳ קצ̇יב שבט או שרביט ונכתב בצדי ונקודה מלמעלה והיא הברה בפני עצמה וגם היא דומה להברת דלת ברפי. ופי׳ עט̇ים עצום ונכתב בטית ונקודה מלמעלה והיא הברה בפני עצמה וגם היא דומה להברת דלת ברפי ... והיה רבנא יצחק בן רבנא שלמה ז״ל אומר כי יש בלשון העבריים אצל הטבריים הטא והצדי והיה קורא ויטע אהלי אפט̇נו והיה מיסד הטא̇ בלשונו והיא בכתב דלת. והיה קורא ויצ̇רכו את לשונם והיה מייסד הצא̇ד בלשונו והיא בכתב דלת. וכל זה למה מפני שהיה בקי בקריאת בני טבריה, cited by Mann (1931, 670, n.106). Cf. Schreiner (1886, 221), Dukes (1845, 9, 93), Grossberg (1902, 24).

vernacular dialects, the two have merged either to an emphatic stop *ḍ* (mainly in urban dialects) or to an emphatic interdental *ḏ̣* (mainly in Bedouin dialects) (Versteegh 2011). In medieval Judaeo-Arabic, a *ṣade* with an upper dot (צ̇) was used to represented Classical Arabic *ḍād* (ض) and a *ṭet* was used to represent Classical Arabic *ḏ̣āʾ* (ظ). As a result of their merger in the spoken language already in the Middle Ages, however, there was frequent confusion in the orthography of Judaeo-Arabic texts, in which a historical *ḍād* and a historical *ḏ̣āʾ* were both represented by either צ̇ or ט̇ interchangeably.[46] The representation of a Hebrew *dalet* in the passage by both צ̇ and ט̇ and the statement attributed to Isaac Israeli that 'in the language of the Hebrews among the Tiberians there were (the sounds of) *ḏ̣āʾ* and *ḍād*' should be interpreted in this light. A single emphatic sound was no doubt intended, presumably the emphatic interdental *ḏ̣* [ðˤ], given the fact that the author in the passage states that these two emphatic Arabic letters resemble *dalet rafe*.

ʾAbū al-Faraj Hārūn in his *al-Kitāb al-Kāfī* refers to the pharyngealization of *dalet* in the words אַפַּדְנ֔וֹ (Dan. 11.45) and פִּטְדָ֔ה 'topaz' (Exod. 28.17):

> 'Indeed, in Arabic there are letters that are pronounced with sounds that are not found in Hebrew, such as *jīm*, *ḍād* and others. Some teachers, however, when reading אָהֳלֵ֣י אַפַּדְנ֔וֹ 'the tents of his palace' (Dan. 11.45) and אֹ֤דֶם פִּטְדָה֙ 'sardius, topaz' (Exod. 28.17) pronounce the *dalet* in them like Arabic *ḍād* or *ẓāʾ* and these words sound like אַפַּצְ̇נוֹ and

[46] See the discussion by Wagner (2010, 28–32).

> פִּטְדָּה. This, however, does not increase the number of letters, since the *dalet* has the same form, although the reading of it differs.[47]

In some modern reading traditions, *dalet* is pharyngealized when in contact with an emphatic consonant. In the Moroccan reading tradition, for example, this is documented by Akun (2010) as occurring after emphatic [rˁ], e.g.

> jarˁˈdˁu (Akun 2010, 72 | L [BHS]: יָרְד֥וּ Exod. 15.5 'they went down')

I.1.5. *HE* הֵא (ה)

Glottal fricative [h]

The name of the letter is normally spelt הֵא or הֵי, vocalized with *ṣere*, in the Masoretic treatises.

A dot in a final *he* indicates that the letter was to be pronounced as a consonant and was not merely a vowel letter (*mater lectionis*) for a final vowel, e.g. לָהּ [lɔːɔh] 'to her', but מַלְכָּה [malkʰɔː] 'queen'. This dot is known as *mappiq* (מַפִּיק), meaning literally 'bringing out, pronouncing'. In medieval sources, such as the Masoretic treatises, the term sometimes is vocalized as *mappeq* (מַפֵּיק, מַפֵּק),[48] which is an Aramaic *hafʿel* participle from

[47] Ed. Khan, Gallego and Olszowy-Schlanger (2003, §I.24.2): בל פי אלערבי מן אלאחרף אלמנטוק בהא פי כלאמהם מא ליס לאלעבראני נחו אלג̇ים ואלצ̇אד וגירהסא ואן כאן בעץ̇ אלמעלמין אדא קרא אהלי אפדנו ואדם פטדה אכרג אלדאל פיהמא ככרוג אלצ̇אד או אלטא פי אלערבי פיסמע מנה כמסמוע אפצ̇נו פטצ̇ה פליס דלך בזאיד פי עדד אלארף אד אלדאל צורתהא ואחדה ואן אכתלפת אלקראה.

[48] E.g. CUL T-S D1.2.

the root *n-p-q* ‘to come out’. This is the earlier form of the term, *mappiq* being a later Hebraization. Some manuscripts of Masoretic treatises vocalize the term *mappaq* (מַפַּק).[49] In *Hidāyat al-Qāriʾ* the consonantal pronunciation of *he* was referred to as ‘appearance’ (*ḏuhūr*).[50]

The *mappiq* is in principle marked in consonantal *he* only at the end of a word since in vocalized texts it is only in this context that there would be ambiguity of reading, e.g. יַלְדָּהּ [jalˈdɔːɔh] ‘her child’ as opposed to יַלְדָּה [jalˈdɔː] ‘girl’. At the beginning or in the middle of a word, a consonantal pronunciation in the onset of a syllable is indicated by a vowel sign on the letter or a following vowel letter, e.g. הָאֽוֹר ‘the light’ (Gen. 1.3), יְהַלֵּ֑ךְ ‘it will go’ (Psa. 85.14), הוֹלִ֥ידוֹ ‘his giving birth to’ (Gen. 5.4) or by a *shewa* sign in a syllable coda, e.g. פְּדַהְאֵ֖ל [pʰaðahˈʔeːel] ‘Pedahel’ (Num. 34.28). A word-medial *he* that does not have a vocalization sign or is not followed by a vowel letter must be read as a vowel letter, e.g. פְּדָהצֽוּר [pʰaðɔːˈsˤuːurˤ] ‘Pedahzur’ (Num. 1.10; despite the normal English spelling of the latter, the *he* is not pronounced according to the Tiberian reading tradition).[51] In some manuscripts, however, consonantal *he* is marked with *mappiq* within a word. This is found in particular in words of unusual form in which consonantal *he* is pointed with *shewa*, e.g. L and S בָּהְשַׁמָּה֙ [bɔhʃamˈmɔː] ‘when it lies desolate’ (Lev. 26.43), S פְּדַּהְּאֵ֖ל

[49] E.g. MS S27, fols. 1r-1v, *Hidāyat al-Qāriʾ*, short version, edition in vol. 2 of this book, §II.S.2.0.

[50] Long version, edition in vol. 2 of this book, §II.L.1.3.4.; Eldar (1980, fol. 9b, line 31).

[51] Ofer (2013).

[pʰaðahˈʔeːel] ‘Pedahel’ (Num. 34.28).[52] In such contexts, the consonantal *he* was evidently felt to be at particular risk of being read incorrectly.

In the manuscript A the dot of the *mappiq* in word-final *he* is often placed low in the letter, as in Prov. 5.19 shown below, and is occasionally written under the letter:[53]

A: 

L:  BHS: בְּאַהֲבָתָ֗הּ ‘with her love’

Mappiq is frequently written under final consonantal *he* in manuscripts with Non-Standard Tiberian (Non-Standard Tiberian) vocalization, e.g.

Genizah manuscripts

יְגִיעָהּ (T-S A11.1, Blapp 2017, 51 | L [BHS]: יְגִיעָ֥הּ Job 39.16 ‘her labour’)

לָהּ (T-S A11.1, Blapp 2017, 51 | L [BHS]: לָ֗הּ Job 39.17 ‘to her’)

אֱלוֹהַּ (T-S A11.1, Blapp 2017, 51 | L [BHS]: אֱל֗וֹהַּ Job 40.2 ‘god’)

In Non-Standard Tiberian manuscripts from the Genizah, the *mappiq* is occasionally written in the lower half of the letter (Blapp 2017, 112, 128).

[52] Yeivin (1980, 285).

[53] Yeivin (1968, 49–50).

European manuscripts

בְּקִרְבָּהׅ (Codex Reuchlinianus | L [BHS]: בְּקִרְבָּ֑הּ Isa. 19.14 ‘within her’)

אֹתָהׅ (Codex Reuchlinianus | L [BHS]: אֹתָ֑הּ Isa. 19.17 ‘her [obj.]’)

גְּבוּלָהׅ (Codex Reuchlinianus | L [BHS]: גְּבוּלָ֖הּ Isa. 19.19 ‘its boundary’)

כְּגֹבַהׅ (BL Add 21161 | L [BHS]: כְּגֹ֤בַהּ Amos 2.9 ‘like the height’)

Mappiq in the form of a dot under a final consonantal *he* is also found in some manuscripts with Palestinian vocalization, e.g.

פֿריהׅ וטובהׅ (T-S 12.197, Kahle 1927, II, 80; Revell 1970a, 95 | L [BHS]: פִּרְיָ֖הּ וְטוּבָ֑הּ Jer. 2.7 ‘its fruits and its good things’)

In Non-Standard Tiberian manuscripts, a *mappiq* is occasionally written on a word-internal or even a word-initial consonantal *he* with a vocalization sign. In such cases, it is written within the letter, e.g.

Genizah manuscripts

נַהְּרוֹת (T-S A13.35, Blapp 2017, 191 | L [BHS]: נַהֲר֥וֹת Psa. 74.15 ‘streams’)

וְהִּתְעַלַּמְתָּ (T-S A5.12, Arrant 2020 | L [BHS]: וְהִֽתְעַלַּמְתָּ֖ Deut. 22.4 ‘and you ignore’)

יִהְּיוּ (CUL Or 1080.A4.18, Arrant 2020 | L [BHS]: יִהְי֥וּ Num. 28.19 ‘they shall be’)

הַזֶּהּ (T-S NS 284.85, Arrant 2020 | L [BHS]: הַזֶּ֤ה Exod. 3.21 ‘this’)

European manuscripts

וְהָּיִ֫יתָֿ (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]: וְהָיִ֥יתָ֖ 1 Kings 2.2 ‘and you will be’)

Mappiq in Non-Standard Tiberian manuscripts is sporadically marked even where the *he* has the function of a *mater lectionis*.

מַעֲשֵׂ֣הּ (T-S NS 68.22, Arrant 2020 | L [BHS]: מַעֲשֵׂ֣ה Deut. 28.12 ‘work of’)

וְמַכֵּ֖הּ (T-S AS 8.123, Arrant 2020 | L [BHS]: וּמַכֵּ֥ה Lev. 24.21 ‘and he who strikes’)

It is significant that in A and in Non-Standard Tiberian manuscripts that mark *mappiq* under the *he*, when a dot is marked within consonantal *ʾalef*, it is, by contrast, always written within the letter. Moreover, whereas the Masora refers to the dot in *ʾalef* in the four canonical places (§I.1.1.1.) as *dagesh*, the term *dagesh* is never used to refer to the *mappiq*. The Masoretic notes and treatises generally refer to cases of *mappiq* in statements containing the participle *mappeq* ‘to pronounce’ such as

מלין מן חד וחד מפקין ה׳

‘Unique words in which one pronounces *he*’ (Ginsburg 1880, §36)

This demonstrates that the *mappiq* does not represent gemination. Moreover, *he* is not geminated in any other context.

On some occasions in Non-Standard Tiberian manuscripts, a final consonantal *he* is marked with a *shewa* sign, e.g.

Genizah manuscripts

אלֹ֣והְ (T-S A11.1, Blapp 2017, 47 | L [BHS]: אל֣וֹהַ Job 39.17 ‘God’)

יגְבִּ֣יהְ (T-S A11.1, Blapp 2017, 48 | L [BHS]: יַגְבִּ֣יהַ Job 39.27 ‘it mounts’)

European manuscripts

יַֿגִּ֥יהְ (Codex Reuchlinianus | L [BHS]: יַגִּ֥יהַ Isa. 13.10 ‘[does not] give light’)

When word-final *he* acts as a vowel letter, it is sometimes, though not regularly, marked with *rafe* in the model Tiberian manuscripts, e.g.

L: וְלֹא־יָכְֿלָ֣הֿ ‘she was not able’ (Exod. 2.3)

L: חָזָ֔הֿ ‘he saw’ (Isa. 1.1)

L: סָרָ֑הֿ ‘apostasy’ (Isa. 1.5)

Rafe is written more regularly in some Non-Standard Tiberian manuscripts, e.g.

Genizah manuscripts:

אַשְׁפָּ֑הֿ (T-S A11.1, Blapp 2017, 56 | L [BHS]: אַשְׁפָּ֑ה Job 39.23 ‘quiver’)

מִלְחָמָ֑הֿ (T-S A11.1, Blapp 2017, 59 | L [BHS]: מִלְחָמָ֑ה Job 39.25 ‘battle’)

הַשָּׂדֶ֫ה (T-S A11.1, Blapp 2017, 59 | L [BHS]: הַשָּׂדֶ֫ה Job 40.20 'the field')

European manuscripts

לַמִּלְחָמָ֫ה (Codex Reuchlinianus | L [BHS]: לַמִּלְחָמָ֫ה 1 Sam. 23.8 'to war')

קְעִילָ֫ה (Codex Reuchlinianus | L [BHS]: קְעִילָ֫ה 1 Sam. 23.8 'Keilah')

שָׁנָ֫ה (BL Add 21161 | L [BHS]: שָׁנָ֫ה Amos 2.10 'year')

Some Non-Standard Tiberian manuscripts mark a *rafe* sign on *he* in contexts where it is consonantal in the Standard Tiberian tradition, e.g.

הֻ֫וּא (T-S A13.20, Blapp 2017, 174 | L [BHS]: הֻ֫וּא Psa. 68.36 'he')

הֿוֹשִׁיעֵנִי (T-S A13.20, Blapp 2017, 174 | L [BHS]: הוֹשִׁיעֵנִי Psa. 69.2 'save me!')

בְּמַקְהֵלוֹת (T-S A13.20, Blapp 2017, 175 | L [BHS]: בְּמַקְהֵלוֹת Psa. 68.27 'in the congregation')

יְהֿוּדָה (T-S A13.20, Blapp 2017, 175 | L [BHS]: יְהוּדָה Psa. 68.28 'Judah')

Here the *rafe* should, it seems, be interpreted as signalling that the letter is consonantal but not geminated.

The Masora identifies a number of cases where a word-final *he* that would be expected to be consonantal is not pronounced:

חד מן י״ח לא מפק׳ ה׳ בסוף תיבותה

‘One of eighteen cases in which *he* is not pronounced at the end of the word’ (Ginsburg 1880, §37)

This list includes cases where the *he* has the meaning of a 3fs suffix. In some cases, a *rafe* is marked over the *he* in L, e.g.

L: וַתַּחְמְרָ֥ה ‘and she daubed it (fs)’ (Exod. 2.3)

L: הִוָּֽסְדָ֖הֿ ‘its being founded’ (Exod. 9.18)

L: עֲוֺנָ֥הֿ ‘its (fs) iniquity’ (Num. 15.31)

L: צִדָּ֑ה ‘its (fs) side’ (1 Sam. 20.20)

Another Masoretic note lists pairs of words ending in *he*, in one member of which it is pronounced consonantal and in the other it is not:

חד מן י״א זוגין חד מפק׳ ה׳ וחד לא מפק׳ ה׳ בסוף תיבותה

‘One of eleven pairs, in one of which *he* is pronounced and the other *he* is not pronounced at the end of the word’ (Ginsburg 1880, §38)

Some words in this list exhibit what are clearly variant realizations of the 3fs suffix. In some cases where the *he* is a vowel letter a *rafe* is marked over the *he* in L, e.g.

L: וּשְׂעָרָ֖הּ ‘and its (fs) hair’ (Lev. 13.20)

L: וּשְׂעָרָ֖הֿ ‘and its (fs) hair’ (Lev. 13.4)

L: וְאֶתְנַנָּ֔הּ ‘and her hire’ (Isa. 23.18)

L: לְאֶתְנַנָּ֖הֿ ‘to her hire’ (Isa. 23.17)

Examples of such 3fs suffixes without consonantal realization could be interpreted as the phonetic weakening of a final consonantal *he* that has become fixed in the reading tradition.

Alternatively, it may be morphological variation, reflecting different dialectal forms at an earlier period, which has become fixed.

There is ample evidence from the Dead Sea scrolls of the vulnerability of consonantal *he* to weakening in the Second Temple period. The cases of weakening that are discernible in the orthography are between vowels, e.g.[54]

אׄחׄרׄים (4Q6 f1.10 | L [BHS]: אַחֲרֵיהֶ֑ם Gen 48.6 ‘after them’)

אלוים (8Q4 f1.35 | L [BHS]: אֱלֹהִ֣ים Deut. 11.16 ‘gods’)

לׄעׄלות (4Q51 9e–i.9 | L [BHS]: לְהַעֲל֣וֹת 1 Sam 10.8 ‘to offer [sacrifices]’)

ומטו (1QIsa[a] 10.11 | L [BHS]: וּמַטֵּ֑הוּ Isa. 10.24 ‘his staff’)

משתריים (1QIsa[a] 22.26 | L [BHS]: מֵֽהִשְׂתָּרֵ֑עַ Isa. 28.20 ‘[is too short] to stretch out’)

מתלות (1QIsa[a] 24.18 | L [BHS]: מַהֲתַלּֽוֹת Isa. 30.10 ‘illusions’)

לשמיע (1QIsa[a] 47.26 | L [BHS]: לְהַשְׁמִ֥יעַ Isa. 58.4 ‘to make heard’)

בתומות (1QIsa[a] 51.9 | L [BHS]: בַּתְּהֹמ֑וֹת Isa. 63.13 ‘through the depths’)

Weakening of consonantal *he* occurs also in modern reading traditions. This includes the weakening of final *he* written with *mappiq* in the vocalized text, e.g.

[54] Data supplied by Aaron Hornkohl.

Aleppo

ˌleβadˈda· (Katz 1981, 13 | L [BHS]: לְבַדָּ֔הּ Exod. 22.26 ‘by itself [fs.]’)

missobˈʕa (Katz 1981, 13 | L [BHS]: מִשָּׂבְעָֽהּ Ruth 2.18 ‘from her satisfaction’)

Morocco

saraˈta (Akun 2010, 67 | L [BHS]: צָֽרָתָ֖הּ 1 Sam. 1.6, ‘her rival wife’)

ʕaluˈta (Akun 2010, 67 | L [BHS]: עֲלֹתָ֖הּ 1 Sam. 1.7 ‘her going up)

Kerala

haʃaˈba: (Forsström 2013, 461 | L [BHS]: חֲשָׁבָ֣הּ Gen. 50.20 ‘he meant it [fs.])

In the Babylonian reading tradition, a *mappiq* occurs in a 3fs verbal object suffix attached to a 3fs suffix conjugation form and after an energic *nun* (Yeivin 1985, 336). In both these contexts the suffix is regularly non-consonantal in the Tiberian tradition. The Babylonian *mappiq* is a small superscribed *he*:[55]

ושׁכלתהּ [wʃikkʰalˈlaːttʰɔːh] (וְשִׁכְּלֻ֣תָּה Ezek. 14.15 ‘and you will make it (f) childless’)

וכעסתהּ [wχeːʕasˈsaːttʰɔːh] (וְכִֽעֲסַ֤תָּה 1 Sam 1.6 ‘and she provoked her’)

[55] Data supplied by Shai Heijmans.

יבלענה [jivlɔːˈʕaːnnɔːh] (יְבְלָעֶנָּה Isa. 28.4 ‘he will swallow it (f)’)

This is most easily interpreted as reflecting the fact that the Babylonian and Tiberian traditions here have different morphological forms of the 3fs suffix. The occasional occurrence of a non-consonantal variant of the 3fs suffix in the Tiberian tradition in other contexts, therefore, could also be the result of morphological variation.

I.1.6. *VAV* וָו (ו)

Labio-dental [v] and labio-velar semi-vowel [w]

In *Hidāyat al-Qāriʾ* the name of this letter is spelt ואו, which represents, it seems, the corresponding Arabic name (*wāw*).[56]

According to *Hidāyat al-Qāriʾ,* the place of articulation was the lips.[57] This could be referring to a bilabial [w] or labio-dental [v] pronunciation. It is, however, explicitly stated by David ben Abraham al-Fāsī (tenth century C.E.), the Palestinian Karaite lexicographer, that in Palestine consonantal *vav* both with and without *dagesh* was pronounced as a labio-dental. He makes this observation in the entry in his dictionary, *Kitāb Jāmiʿ al-ʾAlfāẓ* (‘The book of the collection of words’) on the name פֻּוָּה:

> תּוֹלָע וּפֻוָּה (Gen. 46.13): name of a man. The accent is on the *vav* and it is read *rafe*. The pronunciation of the *vav* in it is like the way the Palestinians (pronounce the letter in words) such as הֱוֵה ‘be!’ (Gen. 27.29), דָּוָה ‘ill’ [fs.] (Lev.

[56] E.g. short version, edition in vol. 2 of this book, §II.S.2.2.

[57] Long version, edition in vol. 2 of this book, §II.L.1.3.9.

> 20.18, etc.), הִרְוָ֫ה 'it watered' (Isa. 55.10). Some of the teachers have made a mistake by reading it (like the *vav* in) רוּחַ 'spirit' and נִיחוֹחַ 'soothing'. This is because whenever the accent is on the letter before a *vav*, its pronunciation is light, between the lips, as in רְ֫וּחַ 'spirit' and נִיחֹ֫וחַ 'soothing', יְהוֹשֻׁ֫עַ 'Joshua', לָנֻ֫וּעַ 'to sway' (Jud. 9.9, etc.), שָׁמוֹעַ 'to hear', יָדֹעַ 'to know', נֹחַ 'Noah', מֹחַ 'brain'. Its pronunciation (i.e. the *vav* of פֻּוָּ֫ה), like every (consonantal) *vav* in our (reading tradition), both light (i.e with *rafe*) and with *dagesh*, is between the upper teeth and the lower lip. Examples with *dagesh* are: יָ֭צָא קַוָּ֑ם 'their speech went out' (Psa. 19.5), צִוָּ֑ם 'he commanded them' (Gen. 50.12, etc.), כַּאֲשֶׁ֥ר צִוָּ֖ה 'as he commanded' (Gen. 7.9, etc.), אֲשֶׁ֣ר יְצַוֶּ֜ה 'that he commands' (Gen. 18.19, etc.). Examples with light (*vav*) are: הֹוָ֤ה עַל־הֹוָה֙ 'disaster upon disaster' (Ezek. 7.26), הֹוֶ֥ה לָהֶ֖ם לְמֶ֑לֶךְ '(you) be for them a king' (Neh. 6.6), וְרָוַ֤ח לְשָׁאוּל֙ 'and Saul was refreshed' (1 Sam. 16.23), לֹֽא־יֵבֹ֖שׁוּ קֹוָֽי 'those who wait for me will not be put to shame' (Isa. 49.23). Now, תּוֹלָ֥ע וּפֻוָּ֖ה (Gen. 46.13) is like this.[58]

Al-Fāsī makes the point here that consonantal *vav* in all contexts is pronounced as a labio-dental [v]. The only exception is constituted by words that contain a *vav* followed by a guttural

[58] *Kitāb Jāmiʿ al-ʾAlfāẓ*, ed. Skoss (1936, vol. 2, 451-452): תולע ופֻוָּה אסם רג̇ל ולחנה פי אלויו וקראתה רפי וכ̇רוג̇ פיה אלויו כראי אלשאמיין מת̇ל הֱוֵה דוָה הרוָה וקד גלט בעץ̇ אלמעלמין אלד̇י יקרוה מת̇ל רוּח ניחוח וד̇לך אן כל ויו יכון אללחן פי אלחרף אלד̇י קבלה יכון כ̇רוג̇ה מכ̇פף בין אלשפתין מת̇ל רְ֫וּח ניחֹ֫וח יהושֻׁ֫ע לנוּע שמוֹע ידֹע נֹח מֹח. פכ̇רוג̇ה ככ̇רוג̇ כל ויו לנא אלמכפף ואלמדגוש בין אלאסנאן אלפוקאניה ואלשפה אלספלאני אעני באלמדגוש מת̇ל יצא קַוָּם צוָּם כאשר צוָּה אשר יצוֶּה ואעני באלמכפף מת̇ל הוָֹה על הוָֹה הוֶֹה להם למלך ורָוַח לשאול לא יבשו קוָֹי. ומתלה אלאן תולע ופֻוָּה.

with a furtive *pataḥ* such as רוּחַ and נִיחוֹחַ, where it is pronounced ‘light, between the lips’. This must be referring to a bilabial glide between the vowel and the following *pataḥ* [ˈʀ̟uːwaħ], [niːˈħoːwaħ].

It is stated in the Masoretic treatises that consonantal *vav* had the same pronunciation as *bet rafe*, e.g.

> Every *vav* at the end of a word is pronounced according to the Palestinians as a *bet rafe*. (*Hidāyat al-Qāriʾ*)[59]

> Know that every *vav* that is prefixed to the beginning of a word and has *shewa* is read with (the pronunciation of) *bet*. … I mean it is pronounced as if it were the letter *bet*, as in … וְאָמַר ‘and he shall say.’ (*Treatise on the Shewa*)[60]

Al-Fāsī indicates that the *vav* in the name פֻּוָּה (Gen. 46.13) was pronounced like other cases of consonantal *vav*, i.e. as labio-dental [v]. He says, however, that some teachers mistakenly read it as a bilabial [w]. This implies that there were different traditions of pronouncing the *vav* in this context. Mishaʾel ben ʿUzziʾel (tenth-eleventh century) makes the following observation about the pronunciation of *vav* in this word in his *Kitāb al-Khilaf*:

> As for the word וּפֻוָּה (Gen. 46.13), there is a consensus that it has a *vav* that (is pronounced) in the way it is read in

[59] Long version, edition in vol. 2 of this book, §II.L.1.7.7.

[60] אעלם אן כל ואו מזאד פי אול ללפט̈ה ותחתה שוא יקרא בבא ... אעני יכ̇רג כאנה מת̇ל חרף בית כקולך ... וְאָמר (ed. Levy 1936, כו).

> Iraq, not like *bet rafe*, as in words such as עֲנָוִים ‘poor’ and so forth (in the pronunciation) of the Palestinians.[61]

The consensus referred to here is between the foremost Tiberian Masoretic authorities Ben Asher and Ben Naftali. They pronounced the *vav* in this word in the Babylonian fashion, i.e. as a bilabial [w], not like the labio-dental pronunciation of a *bet rafe*. This was presumably conditioned by the preceding [uː] vowel: [fuːwɔː].

In Non-Standard Tiberian manuscripts, there are sporadic cases of fricative *bet* being written where Standard Tiberian orthography has a consonantal *vav*, which reflects their identical phonetic realization, e.g.

> וּבְגָאַבָתֽוֹ (T-S A5.7, Arrant 2020 | L [BHS]: וּבְגַאֲוָתֽוֹ Deut. 33.26 ‘and in his majesty’)

> הַֽחַבִילָ֔ה (T-S A21.125, Arrant 2020 | L [BHS]: הַֽחֲוִילָ֔ה Gen. 2.11 ‘Havilah’)

> שָׁב (T-S AS 44.35, Outhwaite 2020 | L [BHS]: שָׁ֣וְא Lam. 2.15 ‘emptiness’)

In Karaite transcriptions into Arabic script, a *vav* is generally transcribed by Arabic *wāw*. It is sometimes, however, transcribed by the Arabic letter *bāʾ*. Arabic *bāʾ* is used elsewhere to transcribe both plosive *bet* [b] and fricative *bet* [v]. The occa-

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[61] ואמא לפטֿה ופֻוה מא פיהא כֿלף בוָו עלי מא יקרא באלעראק לא בשבה אלבֵי אלרפי אעני מתֿל ענוים וגירהא ללשאמיין, *Kitāb al-Khilaf* (ed. Lipschütz, 1965, p.כ).

sional use of *bāʾ* to transcribe *vav* indicates that scribes were confusing the labio-dental realization [v] of *vav* with that of *bet rafe*. It is attested as a transcription of medial and final *vav*, e.g.

غـابـاعـنو (Genizah MS 1, Khan 1990a, 45 | L [BHS]: גָוַ֫עְנוּ Num. 20.3 'we had expired')

همصبوث (Genizah MS 1, Khan 1990a, 45 | L [BHS]: הַמִּצְוֺ֑ת Num. 15.22 'the commandments')

وقوبي (BL Or 2548 fol. 42r, 3 | L [BHS]: וְקוֹיֵ֤ Isa. 40.31 'those who are hoping for')

بغاذاب (Genizah MS 1, Khan 1990a, 45 | L [BHS]: בְּגָדָ֖יו Num. 19.19 'his clothes')

Examples are attested in manuscripts of the transcription of consonantal *vav* with *bāʾ* when preceded by long [uː], e.g.

وِسقوباي [vaʕiq̟q̟uːˈvaːaj] (BL Or 2551 fol. 67r, 9 | L [BHS]: וְשִׁקֻּוַ֗י Psa. 102.10 'and my drinks')

This corresponds to al-Fāsī's description of the *vav* in this context in the word פֻּוָּה as a labio-dental [fuːˈvɔː], but not the bilabial pronunciation [fuːˈwɔː] that is ascribed by Mishaʾel ben ʿUzziʾel to Ben Asher and Ben Naftali.

There is even one documented case of *bāʾ* transcribing a glide before a furtive *pataḥ*:

نوبع [ˈnoːvaʕ] (Genizah MS 13, Khan 1990a, 155 | L [BHS]: וְנ֣וֹעַ Psa. 109.10 'and wander')

This does not correspond to al-Fāsī's description of a bilabial [w] in this context.

The medieval sources, therefore, reflect a variety of different distributions of the labio-dental [v] pronunciation of consonant *vav*. These are summarized below:

	Default	After pretonic [uː]	Glide after [uː]/[oː]
Mishaʾel	[v]	[w]	?
al-Fāsī	[v]	[v]	[w]
Transcriptions	[v]	[v]	[v]

It should be pointed out that the transcription in which the form نوبع [ˈnoːvaʕ] is attested is a liturgical florilegium of biblical verses and exhibits several other deviations from Standard Tiberian reading.

We learn from the passage in the *Treatise on the Shewa* cited above that an initial conjunctive *vav* with a *shewa* was pronounced as a labio-dental like *bet rafe*, e.g. וְאָמַר [vɔʔɔːˈmaːaʀ̟] 'and he will say'. How was conjunctive *vav* pronounced when it has the form וּ, i.e. before the labial consonants ב and פ or before a silent *shewa*? This is described in a further passage from the *Treatise on the Shewa*:

> When the *vav* is next to these three letters, namely בֹּמֹף, it should not be pronounced in this way (i.e. like *bet*) and it is not pointed with *shewa*, but rather with one point in the

body of the *vav*, as in וּבָנָ֔ה 'and he will build' (Josh. 6.26, etc.), וּבֵֽרֵאת֔וֹ 'and you will clear it' (Josh. 17.18), וּבָרָ֣א 'and he will create' (Isa. 4.5), וּבִינַ֥ת 'and the discernment of' (Isa. 29.14), וּבַ֖ר 'and clean' (Job 11.4), וּפֶן֩ 'and lest' (Deut. 4.9, etc.), וּפָנָ֞ה 'and he will turn' (Deut. 31.20, etc.), וּפ֑וּט 'and Put' (Gen. 10.6), וּפִֽי 'and the mouth of' (Exod. 39.23, etc.), וּפ֖וֹל 'and beans' (2 Sam. 17.28), וּפְחִ֛י 'and breathe' (Ezek. 37.9), וּמֶ֫לֶךְ 'and king' (Gen. 14.2, etc.), וּמַלְכוּת (cf. וּמַלְכוּתָהּ֙ 'her royal office' Esther 1.19), וּמֹשֵׁ֖ל 'and the ruler' (Gen. 45.8, etc.), וּמַקְל֖וֹ 'and his staff' (Hos. 4.12), וּמֵעַ֖ל 'and from upon' (1 Sam. 6.5, etc.), וּמָעַל 'and he acted treacherously' (cf. מָ֥עַל Josh. 22.20). Nothing of this category is found that is pointed or read וְבָנה, וְמָשַׁל, or וְפוּט, because these three letters are different from the other letters in this respect. When they read them (i.e. these words), it is not pronounced *bet*; I mean, the *vav* in them is not pronounced *bet*, as the aforementioned cases that have *shewa*. Rather, you read their *vav*s as if you are pronouncing אוּ, as if you are saying אֻבָנָה, אֻבָרָא, אֻפָנָה אֻמָלַךְ. You should read all of them in this way. You need not read with a pure *ʾalef*, for an *ʾalef* does not appear in them, but I have only compared it (to *ʾalef*) by way of approximation. … And if the second letter of the words has *shewa*, then it is always pointed and read with a point in the body of the *vav* and it is not read as *bet*, I mean with *shewa*, rather it is read as a pure *vav*, as in וּלְלֵוִ֣י 'and regarding Levi' (Deut. 33.8), וּשְׁמַ֥ע 'and hear' (Exod. 23.21, etc.), וּדְבַ֥ר 'and the matter of' (Num. 23.3),

וּקְרָא 'and call' (Ruth 4.11, etc.), וּרְדּ֞וּ 'and have dominion over' (Gen. 1.28, etc.), and other cases.[62]

According to this passage, the onset of the syllable represented by conjunction וּ was not *ʾalef*. It would be inappropriate, therefore, to transcribe it as [ʔuː]. This, moreover, would be a heavy CVV syllable, with a consonantal onset and long vowel in the rhyme. This would be an unexpected syllabic structure for a particle that has *shewa* in other contexts, when compared to the syllable structure of particles such as בְּ and לְ. These latter particles have a short vowel in an open syllable, represented by *shewa* (i.e. [ba], [la], see §I.2.5.1.) or a short vowel in a closed syllable when followed by a silent *shewa*, e.g. לִשְׁמוּאֵל [liʃmuːˈʔeːel] 'to Samuel'. It would be more appropriate to interpret the syllable structure of conjunctive *vav* וּ as [wu], with a voiced labio-velar approximant [w] as onset. Such a voiced onset would resemble the vowel nucleus [u] in acoustic and articulatory properties, and therefore would be difficult to distinguish from a long [uː].

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62 אדא גאור אלוו להדה אלתלתה אחרף והי בֿמֿףֿ פאנה לא יגוז חיניד אן תכרג בדאך אלכרוג ולא תנקט בשוא בל בנקטה ואחדה פי גוף אל וָו מתל ובנה ובראתו וברא ובינת ובר ופן ופנה ופוט ופי ופול ופחי ומלך ומלכות ומושל ומקלו ומֵעל ומָעל וליס יוגד פי הדא אלגנס אלבתה שי ינקט ולא יקרא ובָנה ולא ומָשל ולא ופוט לאן הדה אלתלתה אחרף מכאלפה לסאיר אלאחרף פי הדא ואדא קרוהא ולא יקאל בַב אעני לא יקרא פיהא אלוּו בב כמא תקרא אלאולה אלדי בשוא בל תקרא ואואתהא כאנך תכרגהא באוּ כאנך תקול אֱבָנָה אֱבָרָא אֱמָלַךְ אֱפָנָה עלי הדא אלמתאל תקרא כלהא וליס יגב תקרא באלף מחץֿ ולא יבין פיהא אלף ואנמא מתלת לך באלתקריב וכדא ... ואן כאן אלחרף אלתֿאני מן אלתיבות בשוא פכלה ינקט ויקרא בנקטהֿ פי גוף אלואו ולא יקרא בבא אעני בשוא בל יקרא בואו מחץֿ כקולך וּללוי וּשמע וּדבר וּקרא וּרדו וּגֿירהמא (CUL Or 1080.13.3.2, fol. 1r–1v and Levy ed., 1936, כז). See on this passage Posegay (2019).

The Karaite transcriptions, indeed, represent the conjunction ו with an initial Arabic *wāw* and not an Arabic *ʾalif*. In some transcriptions, word-initial וּ is represented by Arabic *wāw* vocalized with a Hebrew *qibbuṣ*, e.g.

ولنخدي (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: וּלְנֶכְדִּ֑י Gen. 21.23 'to my posterity')

وتخال (BL Or 2539 MS B, fol. 124v, 9 | L [BHS]: וּתְכַ֥ל Num. 17.25 'so that you may make an end')

Elsewhere in the manuscripts long [uː] is transcribed with a *shureq* point in *wāw*, e.g.

احوثنو (BL Or 2539 MS A, fol. 77r, 7 | L [BHS]: אֲחֹתֵ֕נוּ Gen. 24.60 'our sister')

ميحوص (BL Or 2539 MS A, fol. 113v, 5 | L [BHS]: ־מִח֣וּץ Deut. 23.11 'from outside')

تجعو (BL Or 2539 MS B, fol. 122v, 11 | L [BHS]: תִּגְּע֖וּ Num. 16.26 'you touch')

This applies even to cases where the orthography in the Hebrew *ketiv* is defective and the Tiberian codices have a *qibbuṣ*, e.g.

لزقوناو (BL Or 2539 MS A, fol. 63r, 2 | L [BHS]: לִזְקֻנָֽיו׃ Gen. 21.7 'in his old age')

يواخَلوهو (BL Or 2539 MS B, fol. 119r, 1 | L [BHS]: יאֹכְלֻ֑הוּ Num. 9.11 ‘they shall eat it’)

This suggests that the vocalization with *qibbuṣ* reflects a consonantal + short vowel [wu]. In one manuscript an Arabic *ḍamma* vowel is written on the *wāw* rather than a *qibbuṣ*, e.g.

وُمَاْ (BL Or 2554 fol. 80r, 12 | L [BHS]: וּמַה־ Cant. 7.7 ‘and what’)

وُخْرامينو (BL Or 2554 fol. 54r, 4 | L [BHS]: וּכְרָמֵ֖ינוּ Cant. 2.15 ‘and our vineyards’)

وُدْمي (BL Or 2554 fol. 94v, 7 | L [BHS]: וּֽדְמֵה־ Cant 8.14 ‘and be like!’)

In one manuscript, an initial conjunctive וּ is transcribed by Arabic *wāw* vocalized with a Hebrew *shewa*. This most likely represents a consonantal onset followed by a short vowel, e.g.

ومسنفو (BL Or 2539 MS A, fol. 73v, 9 | L [BHS]: וּמִסְפּ֔וֹא Gen. 24.32 ‘and fodder’)

ومايم (BL Or 2539 MS A, fol. 74r, 1 | L [BHS]: וּמַ֙יִם֙ Gen. 24.32 ‘and water’)

In one manuscript an Arabic *fatḥa* sign is marked over the *wāw* that transcribes conjunctive וּ, e.g.

وَمي (BL Or 2552 fol. 99v, 5 | L [BHS]: וּמִ֣י Ecc. 2.19 ‘and who’)

This reflects a variant reading tradition in which the conjunctive *vav* is read [va] even before a labial. This may be what the vocalization with *shewa* in the manuscript BL Or 2539 MS A was intended to represent. In Standard Tiberian pronunciation [wu] reflects the shift of the short vowel to a rounded quality by assimilation to the labial environment. One may compare traditions of reading such as [vami:] (L [BHS]: וּמִ֣י) to cases in Origen’s Hexapla such as the following, where the Greek transcription has *ουα* or *ουε* where the Standard Tiberian tradition has וּ:[63]

ουαδου (Ambrosiana Palimpsest | L [BHS]: וּֽדְע֗וּ Psa. 46.11 ‘and know! (mp)’)

ουαλσωνι (Ambrosiana Palimpsest | L [BHS]: וּֽ֭לְשׁוֹנִי Psa. 35.28 ‘and my tongue’)

ουαρημ (Ambrosiana Palimpsest | L [BHS]: וּֽרְעֵ֥ם Psa. 28.9 ‘and shepherd (ms) them!’)

ουεβροβ (Ambrosiana Palimpsest | L [BHS]: וּבְרֹ֥ב Psa. 49.7 ‘and in the multitude of (cstr.)’)

Similar forms are occasionally found in the Babylonian tradition, e.g.[64]

וֺבמישוֺר (Yeivin 1985, 1152 | L [BHS]: וּבְמִישׁוֹר֙ Mal. 2.6 ‘and in uprightness’)

[63] Data supplied by Ben Kantor.

[64] Data supplied by Shai Heijmans.

The normal vocalization of *vav* in the Babylonian tradition in such contexts, however, is with *ḥireq*, e.g.

> וִּמהוּמֹה (Yevin 1985, 338 | L [BHS]: וּמְהֽוּמָה Prov. 15.16 'and trouble')
>
> וִּבפִּשׁעֵיכם (Yevin 1985, 342 | L [BHS]: וּבְפִשְׁעֵיכֶם Isa. 50.1 'and for your transgressions')
>
> וִּבכִשרוֹן (Yevin 1985, 352 | L [BHS]: וּבְכִשְׁר֑וֹן Ecc. 2.21 'and with skill')

There is an exceptional case of *ḥireq* in L after conjunctive *vav* in this context, where וּ is expected:

L [BHS]: וִשְׁאֵֽלְךָ (Gen. 32.18 'and he will ask you' | S: וּשְׁאֵלְךָ)

When word-initial conjunctive וּ is followed by a consonant with silent *shewa*, it sometimes takes minor *gaʿya* in the Tiberian tradition. Minor *gaʿya* lengthened the duration of a short vowel in a closed syllable slightly (represented in IPA as a half-long vowel, cf. §I.2.8.2.2.). When this is the case, some transcriptions represent the lengthened syllable with two Arabic *wāw*s. This must be interpreted as representing a consonantal onset followed by a lengthened vowel [uˑ] vowel, i.e. [wuˑ], e.g.

> وولهاعلُوثُو (BL Or 2540, fol. 8v, 4 | L [BHS]: וּֽלְהַעֲלֹתוֹ Exod. 3.8 'and to bring him up')
>
> ووليَاعِقُوبَ (BL Or 2546, fol. 85v, 8 | L [BHS]: וּֽלְיַֽעֲקֹב Num. 32.11 'and to Jacob')

ووِلااهِزون (BL Or 2544 fol. 158r, 4 | L [BHS]: וְֽלְאַהֲרֹ֖ן Exod. 8.4 ‘and to Aaron’)

The same transcription is found when a word-initial conjunctive ו is lengthened by a phonetic *gaʿya* (§I.I.2.5.8.4.), which causes a following *shewa* to be read as vocalic, e.g.

ووِشِي (BL Or 2555 fol. 96r, 5 | L [BHS]: וּֽשֲׁתֵ֥ה Ecc. 9.7 ‘and drink!’)

In some model Tiberian codices a *vav* before a following [uː] is written with a dot. This could be interpreted as an attempt to represent a labio-velar onset [w] rather than [v], e.g.[65]

L, A: וַיִּשְׁתַּחֲוּ֖וּ (Deut. 29.25 ‘and they worshipped’)

L, B: טָו֣וּ (Exod. 35.26 ‘they span’)

C: וְנִלְו֣וּ (Jer. 50.5 ‘let us join’)

In some manuscripts, consonantal *vav*, before [uː] and also in other contexts, is marked with a *rafe*, e.g.[66]

C: וְתַשְׁוֻ֑וּ (Isa. 46.5 ‘and you make equal’)

L: וִֽיהִ֓י (Psa. 90.17 ‘and let it be’)

In manuscripts with Non-Standard Tiberian vocalization, these two strategies for marking consonantal *vav* have been extended to other contexts. The placement of a dot in consonantal

[65] Yeivin (1980, 285–286).

[66] Yeivin (1980, 286).

vav is found in such manuscripts in word-initial, word-medial and word-final position, e.g.

Genizah manuscripts

> וּֽאֲרֶץ (T-S A13.20, Blapp 2017, 162 | L [BHS]: וָאָ֑רֶץ Psa. 69.35 ‘and earth’)
>
> וּֽעִ֣ם (T-S A13.20, Blapp 2017, 162 | L [BHS]: וְעִ֗ם Psa. 69.29 ‘and with’)
>
> תִּקְוּוָּתִ֑י (T-S A13.20, Blapp 2017, 162 | L [BHS]: תִּקְוָתִ֑י Psa. 71.5 ‘my hope’).
>
> עַלָ֫וּ (T-S A11.1, Blapp 2017, 51 | L [BHS]: עָ֭לָיו Job 39.23 ‘upon him’)

European manuscripts

> אֵלָ֑וּ (ASCNON B.I.1v, Pilocane 2004, 27 | L [BHS]: אֵלָ֑יו Num. 27.11 ‘to him’)

In such contexts, the *vav* would have been pronounced as a labio-dental according to the Standard Tiberian tradition. Moreover, in some cases, a vowel sign is written under it, which shows it must be consonantal, e.g. וּֽאֲרֶץ. Comparison with the strategies for marking consonantal *vav* in the Babylonian and Palestinian traditions, however, suggest that the dot in the *vav* should be interpreted as a *shureq* vowel sign. Its purpose in the Non-Standard Tiberian manuscripts was to ensure that the letter was read as a separate segment from the adjacent vowel, although it was only an approximating representation of its pronunciation, i.e. presumably a labio-dental.

In Babylonian vocalization, consonantal *vav* is sometimes vocalized with a sign that can only be interpreted as a *shureq* vowel, e.g.[67]

אבׄיׄו (OB, Yeivin 1985, 267 | L [BHS]: אָבִ֑יו Deut. 27.16 ‘his father’)

ולפׄנׄיׄו (LB, Yeivin 1985, 267 | L [BHS]: וּ֝לְפָנָ֗יו Job 21.33 ‘and before him’)

לגׄוׄ (OB, Yeivin 1985, 267 | L [BHS]: לְגֵ֣ו Prov. 26.3 ‘for the back’)

According to the Mishaʾel ben ʿUzziʾel in the passage cited above, the Iraqis, i.e. the Jews of Babylonia, pronounced consonantal *vav* as a bilabial, so a *shureq* was more appropriate as a representation of its pronunciation than in the Tiberian tradition. In manuscripts with Palestinian vocalization, the vowel sign of *ḥolem* occasionally represents consonantal *vav*, e.g.

וישתחוׄו (Bod. Heb. d 44, ff. 1-4, Dietrich 1968, 25* | L [BHS]: וַיִּשְׁתַּחֲווּ־ל֖וֹ 2 Kings 2.15 ‘and they bowed before him’)

שׁוׄעתי (T-S 20.53, Murtonen 1958, לד, Allony and Díez Macho 1958, 259 | L [BHS]: שִׁוַּ֥עְתִּי Psa. 30.3 ‘I cried’)

The *ḥolem* sign here, as with the Tiberian *shureq*, must be regarded as an approximating representation of the labio-dental pronunciation of Palestinian consonantal *vav*.

In Gen. 46.13 L has a dot in the second *vav* of וּפֻוָּ֖ה. Some early codices do not have the dot, e.g. S: וּפֻוָ֖ה. In B a dot appears

[67] Data supplied by Shai Heijmans.

to have been written and then erased.[68] The name occurs also in Num. 26.23 where L and other early codices have לְפֻוָ֔ה without the dot. It is likely that the dot in the vocalization of L in Gen. 46.13 should be identified as *shureq* to mark the consonantal pronunciation of the letter rather than a *dagesh* and the reading [fuːˈwɔː] was intended, as in other manuscripts.[69] The Babylonian vocalization of וּפֻוָּ֖ה (L, Gen. 46.13) is ופוׄהׄ (Yeivin 1985, 764), with a *shureq* over the *vav* and no vocalization on the *pe*. This could be compared to Tiberian vocalizations such as רוּחַ, which al-Fāsī claims contained a bilabial glide: [ʀ̟uːwaħ]. Babylonian פוׄהׄ is likely to have been intended to represent [fuːˈwɔː].

In Non-Standard Tiberian manuscripts, *rafe* is marked on consonantal *vav* in a wider range of contexts than in the Standard Tiberian codices. It is found on *vav* in word-initial and word-medial position, e.g.

וְֿגַ֣ם (T-S A12.1, Blapp 2017, 99 | L [BHS]: וְגַ֣ם Ruth 1.12 ‘and also’)

תִּקְוָֿ֣ה (T-S A12.1, Blapp 2017, 99 | L [BHS]: תִּקְוָ֣ה Prov. 29.20 ‘hope’)

גַּאֲוָֿ֣ת (T-S A12.1, Blapp 2017, 99 | L [BHS]: גַּאֲוַ֣ת Prov. 29.23 ‘pride’)

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[68] A trace of dot is visible and the parchment has been scraped.

[69] In later sources the dot in the word is referred to as a *dagesh*. Jedidiah Norzi (seventeenth century) in his work *Minḥat Shai* (Mantua, 1742–44 ad loc. Gen. 46.13) refers to it as *dagesh* and notes that there were differences of opinion about its presence in the name in Gen. 46.13 in the sources available to him.

The function of the *rafe* here is to mark the letter as consonantal but ungeminated.

Occasionally a *rafe* sign is used to mark consonantal ungeminated *vav* in Palestinian vocalization, e.g.

> עוֹ֞ל (T-S 12.195, Kahle 1930, 83 | L [BHS]: עָ֫וֶל Psa. 53.2 ‘iniquity’)

In Non-Standard Tiberian manuscripts, a consonantal *vav* is indicated by a *shewa* sign, often written within the letter. The *shewa* makes it clear that the letter closes a syllable and so is to be read as a consonant, e.g.

Genizah manuscripts

> עָלָ֣יוְ (T-S A13.18, Blapp 2017, 125 | L [BHS]: עָלָ֣יו Psa. 89.46 ‘on him’)

> כְּנָפָ֣יוְ (T-S A13.18, Blapp 2017, 125 | L [BHS]: כְּנָפָ֣יו Psa. 91.4 ‘his wings’)

European manuscripts

> וְשׁוּלָ֣יוְ (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]: וְשׁוּלָ֣יו Isa. 6.1 ‘and his train’)

> וְהָרִיּוֹתָ֣יוְ (BL Add 21161 | L [BHS]: וְהָרִיּוֹתָ֣יו Hos. 14.1 ‘and his pregnant women’)

The distinction in the Middle Ages between the pronunciation of *vav* as a labio-dental in Palestine and its pronunciation as bilabial in Iraq is continued in modern reading traditions. In reading traditions of the Levant, such as Aleppo, consonantal *vav* is pronounced as a labio-dental, e.g.

ħaj'jav (Aleppo, Katz 1981,4 | L [BHS]: חַיָּ֑יו Gen. 47.28 'his life')

ˌveɣam'huˑ ˌjiɣ'dal (Aleppo, Katz 1981,9 | L [BHS]: וְגַם־ה֣וּא יִגְדָּ֑ל Gen. 48.19 'and he also will be great')

In the Samaritan reading tradition, consonantal *vav* has shifted to [b] (except in the case of conjunctive *vav*), reflecting its merger with fricative *bet* [v] and the consequent shift of fricative *bet* [v] to plosive *bet* [b] (Ben-Ḥayyim 2000, 33–34), e.g.[70]

bå̄bīyyima (Samaritan, Ben-Ḥayyim 2000, 33-34 | L [BHS]: וָוֵיהֶ֖ם Exod. 26.32 'their hooks')

īšåb (Samaritan, Ben-Ḥayyim 2000, 33-34 | L [BHS]: עֵשָֽׂו Gen. 25.25 'Esau')

The occurrence of *pe* in place of consonantal *vav* in a biblical manuscript from Qumran could be taken as evidence that the labio-dental pronunciation already existed in the Second Temple period:[71]

צפה אדוני ליעקוב (4Q111 3.8 | L [BHS]: צִוָּ֧ה יְהוָ֛ה לְיַעֲקֹ֖ב Lam. 1.17 'The Lord commanded Jacob')

The pre-Masoretic transcriptions into Greek and Latin, however, reflect a pronunciation of the consonantal *vav* as a bilabial [w]. In Greek this is represented by ου or υ and in Latin by *u*, e.g.[72]

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[70] Here and elsewhere the transcription system of Ben-Ḥayyim is used for the Samaritan tradition.

[71] Data supplied by Aaron Hornkohl.

[72] Data supplied by Ben Kantor.

Septuagint (third century B.C.E.)

> Οὐκάν (Göttingen Septuagint | L [BHS]: וַעֲקָן Gen. 36.27 'Akan')
>
> Εὕαν (Göttingen Septuagint | L [BHS]: חַוָּה Gen. 4.1 'Eve')

Hexapla of Origen (c. 185–254 C.E.)

> ουαδωρ (Ambrosiana Palimpsest | L [BHS]: וָדֹר Psa. 49.12 'and generation')
>
> βγηουαθω (Ambrosiana Palimpsest | L [BHS]: בְּגַאֲוָתוֹ Psa. 46.4 'at its swelling')

Jerome (346-420 C.E.)

> uaiomer (Jerome, *Epistula* LXXIII.55.18, ed. Hilberg | L [BHS]: וַיֹּאמֶר Gen. 4.15 'and he said')
>
> illaue (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 6.5, 6, 12 | L [BHS]: יִלָּוֶה Gen. 29.34 '[my husband] will join himself [to me]')

In medieval Greek transcriptions, on the other hand, consonantal *vav* is represented by β, which reflects [v], e.g.

Nikolaos of Otranto (1155/60–1235)

> βεέθ (Kantor forthcoming | L [BHS]: וְאֵת Gen. 1.1 'and (direct object marker)')
>
> βιγιομερου (Kantor forthcoming | L [BHS]: וַיֹּאמְרוּ Ex. 32.4 'and they said')

In modern Iraqi reading traditions, such as Baghdad (Morag 1977, 8) and Kurdistan (Sabar 2013), *vav* is pronounced as a bilabial [w]. The same applies to the Yemenite reading tradition,

which was closely related historically with Babylonia in the Middle Ages (Morag 1963; Yaʾakov 2015), e.g.

> wᵉjɪdˈgu (Baghdad, Morag 1977,8 | L [BHS]: וְיִדְגּ֥וּ Gen. 48.16 'and let them increase')
>
> wăʃɔfatˤ (Yemen, Morag 1963,42 | L [BHS]: וְשָׁפַ֨ט Isa. 2.4 'and He will judge')

I.1.7. *ZAYIN* זַ֫יִן (ז)

Voiced alveolar sibilant [z]

According to *Hidāyat al-Qāriʾ,* the Tiberians called this letter *zāy* (זאי), which is the name of the corresponding Arabic letter.[73] A shortened form of the name, *zay*, was also used in Jewish Palestinian Aramaic (Sokoloff 1992, 175) and Syriac (Payne Smith 1879, 1116).

Hidāyat al-Qāriʾ states that the place of the articulation of the letter is the teeth.[74] This evidently refers to the movement of the teeth accompanying the pronunciation of the sibilants. The author does not mention the action of the tongue, which was the main articulator.[75] The *Sefer Yeṣira* describes *zayin* as being articulated between the teeth with a 'resting tongue', or a 'flat

[73] Long version, edition in vol. 2 of this book, §II.L.1.1.2.

[74] Long version, edition in vol. 2 of this book, §II.L.1.3.8. Eldar (1980, fol. 10b, line 77).

[75] Cf. Eldar (1980, n.70).

tongue' according to some versions.[76] In both these passages, the intention may have been that the tongue tip was not engaged in the articulation of the letter, i.e. it was articulated with the blade.

Hidāyat al-Qāriʾ mentions that there is a variant form of *zayin* which is called *zāy makrūkh*, but the author says he knows nothing about it.

> It is said that there are some who attribute a particular feature to *zayin* and call it *zāy makrūkh*. I have not, however, been able to identify their purpose in using the term *makrūkh*, so that I could have described it.[77]

> It has been stated previously that I do not know anything that I can report about the *zāy makrūkh*. I have only mentioned it so that it be known that letters have different attributes.[78]

The term *makrūkh* was used to refer to an emphatic, i.e. pharyngealized, form of *resh* (§I.1.20.). It appears, therefore, that

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[76] בין שינים ובלשון ישן 'between the teeth and with a resting tongue', בלשון שכובה ושטוחה 'with a resting and flat tongue' (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

[77] Long version, edition in vol. 2 of this book, §II.L.1.2.

[78] Long version, edition in vol. 2 of this book, §II.L.1.9.8. Cf. also Eldar (1984a, 32). The Yemenite orthoepic treatise known as the Hebrew *Maḥberet ha-Tījān*, which was based on the long version of the *Hidāya*, contains a similar statement: וכן יש להם ז״ן נקרא מכרוך ואינו ידוע אצלינו 'They (i.e. the Jews of Palestine) have a *zayin* called *makrūkh*, but it is unfamiliar to us (i.e. the Jews of Yemen)' (ed. J. Derenbourg 1871, 81); cf. Morag (1960, 210, n. 45).

the *zāy makrūkh* was an emphatic [zˤ], though its distribution is unknown.

An anonymous Masoretic treatise refers to two variant forms of the letter *ṣade* in the Tiberian Hebrew reading tradition:

> There is another letter (with two realizations), which the people of Palestine never utter (in their vernacular speech). This is *ṣade* and (variant) *ṣade*. It is, however, familiar to the inhabitants of the lands (of the diaspora) due to their living in close proximity to other peoples and their using other languages and languages of other nations.[79]

It is possible that this is referring to a voiced variant of *ṣade*, i.e. [zˤ]. Ibn Khaldūn (North Africa, d. 1406), indeed, refers to a voiced allophone of *ṣade* [zˤ] in the pronunciation of the name אֲמַצְיָהוּ, i.e. [ʔamazˤˈjɔːhuː].[80]

Sībawayhi describes the existence of an emphatic [zˤ] sound in Arabic, which arose through partial assimilation of the letter *ṣād* to an adjacent voiced consonant. With regard to the pronunciation of the *ṣād* in the word *maṣdar* 'source' he states:

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[79] Ed. Allony (1973, 102, lines 29-32 [Allony's reading has been corrected in places]): חרף אכר לא יקולוה אהל אלשאם בתה והו צדי צדי ואנמא אלפוה סכאן אלבלדאן ללמגאורה ואלמסאכנה בגיר קבאילהם ואלאסתעמאל בגיר לגתהם ולגה אמם גירהם. Allony attributed this text to ʿAli ben Yehudah ha-Nazir, but this attribution has been disputed by Eldar (1984a, 33, n.54, 1986, 59–61).

[80] He describes the *ṣade* as *al-ṣād al-mušamma bi-l-zāʾ* '*ṣād* flavoured with *zā*''; cf. Schreiner (1886, 254).

> They make it (the *ṣād*) similar to the homorganic letter that is most like *dāl*, i.e. *zāy*, since it is unaspirated and not emphatic, but they do not change it into pure *zāy*, lest the emphatic quality of the letter be removed.[81]

An emphatic Arabic *zāy* was recognized as an additional Arabic letter in some medieval works on the correct recitation of the Qurʾān (*tajwīd*), where a voiced variant of an Arabic *ṣād* is intended.[82] The Tiberian terminology may have been influenced by this tradition in the Arabic *tajwīd* literature.

The statement in *Hidāyat al-Qāriʾ* concerning the *zāy makrūkh* implies that it is a variant of the written letter *zayin* ('there are some who attribute a particular feature to *zayin*'). The foregoing discussion, however, suggests that the term is referring to the voiced oral reading of the *ṣade*.

I.1.8. *ḤET* חֵית (ח)

Unvoiced pharyngeal fricative [ħ]

This letter is transcribed by Arabic *ḥāʾ* (unvoiced pharyngeal fricative) in the Karaite transcriptions, e.g.

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[81] فضارعوا به اشبه الحروف بالدال من موضعه وهى الزاى لانها مجهورة غير مطبقة ولم يبدلها زايا خالصة كراهية الاجحاف بها للاطباق, *al-Kitāb*, ed. Derenbourg (1889, 476–77).

[82] Makkī ibn ʾAbī Ṭālib al-Qaysī (d. 437/1045), for example, refers to *ṣād allatī yuk̲āliṭu lafẓuhā lafẓa al-zāy* 'A *ṣād* whose pronunciation is mixed with that of *zāy*', as in قزد (= قصد) and الزراط (= الصراط), *al-Riʿāya li-Tajwīd al-Qirāʾa wa-Taḥqīq Lafẓ al-Tilāwa* (ed. Farḥāt 1996, 107).

حيط (BL Or 2539 MS A, fol. 100r, 8 | L [BHS]: חֵֽטְא־ Deut. 19.15 'sin')

كاحاسد (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: כַּחֶ֫סֶד Gen. 21.23 'like the kindness')

همزبيح (BL Or 2539 MS A, fol. 67v, 1 | L [BHS]: הַמִּזְבֵּ֑חַ Gen. 22.9 'the altar')

According to *Hidāyat al-Qāriʾ*, the pharyngeals and the laryngeals had the same place of articulation:

> The letters אהחע have a single place of articulation. This is the throat and the root of the tongue. The Tiberians call it the 'root of the tongue' and 'place of swallowing'.[83]

It is possible that the division of this place of articulation into the 'root of the tongue' and 'place of swallowing' was intended to refer to the production of the pharyngeals and laryngeals respectively. Some medieval grammarians state that *ḥet* and its voiced counterpart *ʿayin* were articulated less deep in the throat than *ʾalef* and *he*.[84]

In the Standard Tiberian tradition, *ḥet* does not take *dagesh*. According to *Hidāyat al-Qāriʾ*, the letter *ḥet* could not be made

[83] Long version, edition in vol. 2 of this book, §II.L.1.3.2.

[84] Ibn Janāḥ, *Kitāb al-Lumaʿ* (ed. Derenbourg 1886, 26–27), Menaḥem ben Saruq, *Maḥberet* (ed. Filipowski 1854, 6).

'heavy' with *dagesh,*[85] i.e. it could not be pronounced with different degrees of muscular pressure.

In Non-Standard Tiberian vocalization, the distribution of *dagesh* is different from that of the Standard Tiberian tradition. The distribution of *dagesh* characteristic of the בגדכפת consonants is extended to most other consonants, with the result that, like the בגדכפת consonants, they take *dagesh* after a silent *shewa* or at the beginning of a word when not preceded by a word ending in a vowel and a conjunctive accent (Morag 1959; Blapp 2018). The *dagesh* in these consonants represented gemination (Yeivin 1983; Khan 2017). Further details of this system of marking *dagesh* will be given in §I.3.3. What is significant here is that the extension of *dagesh* to consonants other than בגדכפת in Non-Standard Tiberian manuscripts does not include the pharyngeals, which in the vast majority of cases do not take *dagesh*. This reflects the difficulty of geminating these consonants. A *dagesh* is found only very sporadically marked on *ḥet* in Non-Standard Tiberian manuscripts, e.g.

Genizah manuscripts

> חַּיִּ֑ים (T-S A13.20, Blapp 2017, 163; 2018, 143 | L [BHS]: חַיִּ֑ים Psa. 69.29 'the living').

European manuscripts

> מִלְחָּמְֿתְּךָ (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]: מִלְחַמְתְּךָ 2 Sam. 11.25 'your fighting')

[85] Long version, edition in vol. 2 of this book, §II.L.1.3.5.

This may have been a strategy for ensuring that the letter was read correctly and did not lose its consonantal pronunciation, rather than marking gemination. The *rafe* sign is occasionally used with a similar function in Non-Standard Tiberian manuscripts. As in some other contexts in Non-Standard Tiberian manuscripts, the *rafe* here marks the letter as consonantal but not geminated, e.g.

נִכְֿחֲֿדֿוּ (Blapp 2017, 175 | L [BHS]: נִכְֿחֲֿדֿוּ Psa. 69.6 ‘they are [not] hidden’)

Both of these strategies for ensuring that the letter is read and not weakened are found in Palestinian vocalization, e.g.

Dagesh

לֿחֿיה (Fassberg 1987, 84 | L [BHS]: לֶֽחֱיָ֔הּ Lam. 1.2 ‘her cheek’)

Rafe

נֿאלחֿוֹ (T-S 12.195, Kahle 1930, 82-84 | L [BHS]: נֶֽאֱלָ֗חוּ Psa. 53.4 ‘they have become corrupt’)

The potential vulnerability of *ḥet* to weakening is reflected in Non-Standard Tiberian manuscripts by the practice of marking a *shewa* sign under the letter in word-final position. The purpose of this was to draw attention to the fact that they are consonants closing a syllable and are not to be weakened and read as vowel letters, e.g.

Genizah manuscripts

וָתִּשְׁכַּֽחְ (T-S A11.1, Blapp 2017, 48 | L [BHS]: וַ֭תִּשְׁכַּח Job 39.14 ‘and she forgot’)

לְנֶ֫צַּח (T-S A13.18, Blapp 2017, 127 | L [BHS]: לָנֶ֫צַח Psa. 89.47 'forever')

European manuscripts

וַיִּבְּרַ֫ח (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וַיִּבְרַ֫ח 1 Kings 11.40 'and he fled')

זֶ֫רַח (ASCNON B.I. 2r, Pilocane 2004 | L [BHS]: זָ֫רַח 1 Chr. 2.4, 'Zerah')

Within the Standard Tiberian reading tradition a *ḥet* was prevented from potential weakening in some contexts by lengthening the vowel before it (§I.2.10.), e.g. וּפְתַֽחְיָ֫ה [wufˌθaˑḥˈjɔː] 'and Pethahiah' (Neh. 11.24), מִֽחְיָ֫ה [ˌmiˑḥˈjɔː] 'reviving' (Ezra 9.8). Another strategy to protect the consonantal pronunciation of *ḥet* at the end of a word-internal syllable was to place a *dagesh* in the following letter (§I.3.1.11.2.). This is found in some early manuscripts (Yeivin 1980, 295; Ginsburg 1897, 133), e.g.

לַחְמְּךָ.(JTS ENA 346 | L [BHS]: לַחְמְךָ 'your bread' Ezek. 4.15)

There is clear evidence from the Dead Sea scrolls of the weakening of *ḥet* in some biblical reading traditions in the Second Temple period, especially that of 1QIsa[a]. This is reflected by the occurrence of *he* or *ʾalef* where the Masoretic tradition has *ḥet*, e.g.[86]

מהשוכים (1QIsa[a] 35.27 | L [BHS]: מַחְשָׁךְ Isa. 42.16 'darkness')

[86] Data supplied by Aaron Hornkohl. Cf. also Reymond (2014, 92).

ואהללה (1QIsaa 37.6 | L [BHS]: וַאֲחַלֵּל Isa. 43.28 ‘and I will profane’)

ויהללהו (1QIsaa 44.17 | L [BHS]: הֶחֱלִ֔י Isa. 53.10 ‘he caused him sickness’)

בצצחות (1QIsaa 48.6 | L [BHS]: בְּצַחְצָחוֹת֙ Isa. 58.11 ‘in scorched places’)

In the modern Samaritan reading tradition *ḥet* has weakened in most contexts to *ʾalef* or zero (Ben-Ḥayyim 2000, 38–39), e.g.[87]

ʾēsəd (L [BHS]: חֶ֫סֶד Gen. 24.14 ‘grace’)

ʾamrāʾēfåt (L [BHS]: מְרַחֶ֫פֶת Gen. 1.2 ‘was hovering’)

ruwwi (L [BHS]: רוּחִ֤י Gen. 6.3 ‘my spirit’)

mār (L [BHS]: מָ֣חָר Gen. 30.33 ‘tomorrow’)

wrū (L [BHS]: וְר֣וּחַ Gen. 1.2 ‘and the spirit of’)

The weakening of the pharyngeals reflected in the Dead Sea scrolls and the Samaritan tradition had its roots in the contact of Hebrew with non-Semitic languages, in particular Greek, in the pre-Islamic period. The measures taken to ensure the correct reading of the *ḥet* in the medieval manuscripts described above show that a special effort had to be made to avoid its being weakened in the transmission of the Masoretic biblical reading traditions still in the Middle Ages. Indeed, in the medieval period there is evidence for the weakening of the pharyngeals in Palestinian liturgical poetry (§I.0.9.).

[87] Data supplied by Aaron Hornkohl.

I.1.9. *Ṭet* טֵית (ט)

Emphatic (i.e. pharyngealized, with retracted tongue root and increased muscular pressure) unvoiced alveolar plosive [tˁ]

According to *Hidāyat al-Qāriʾ*, it was articulated with the tongue tip and the gums.[88] In the Karaite transcriptions, it is represented by Arabic *ṭāʾ*, which was a pharyngealized [tˁ], e.g.

> ما طوبو (BL Or 2539 MS B, fol. 131v, 11 | L [BHS]: מַה־טֹּבוּ Num. 24.5 'how fair are [your tents]')

> ميحوط (BL Or 2539 MS A, fol. 57r, 8 | L [BHS]: מִחוּט־ Gen. 14.23 'from a thread')

> كمطاحوي (BL Or 2539 MS A, fol. 64r, 3 | L [BHS]: כִּמְטַחֲוֵי Gen. 21.16 'like the shots of')

In Greek transcriptions from the pre-Masoretic period, *ṭet* is represented by Greek *tau*, which was an unaspirated stop [t]. In Latin transcriptions from the pre-Masoretic period it is represented by Latin *t*, which likewise represented an unaspirated stop [t]. These reflected the unaspirated realization of the *ṭet*, which is also a feature of Arabic *ṭāʾ*. Examples:[89]

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[88] Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, lines 67–69).

[89] Data supplied by Ben Kantor.

Septuagint (third century B.C.E.)

Φουτιήλ (Göttingen Septuagint | L [BHS]: פּוּטִיאֵ֑ל Ex. 6.25 ‘Putiel’)

Ἰεκτάν (Göttingen Septuagint | L [BHS]: יָקְטָֽן Gen. 10.25 ‘Joktan’)

Λώτ (Göttingen Septuagint | L [BHS]: ל֑וֹט Gen. 11.27 ‘Lot’)

Hexapla of Origen (c. 185–254 C.E.)

βατε (Ambrosiana Palimpsest | L [BHS]: בָטַ֣ח Psa. 28.7 ‘[my heart] trusted’)

εμματ (Ambrosiana Palimpsest | L [BHS]: אֶמּ֥וֹט Psa. 30.7 ‘I [will not] be moved’)

φελλετηνι (Ambrosiana Palimpsest | L [BHS]: פַלְּטֵֽנִי Psa. 31.2 ‘rescue me! (ms)’)

Jerome (346-420 C.E.)

phut (Jerome, *Commentary on Ezekiel*, ed. Glorie, VIII.27.935 | L [BHS]: וּפ֗וּט Ezek. 27.10 ‘Put’)

atemoth (Jerome, *Commentary on Ezekiel*, ed. Glorie, XII.40.517–518 | L [BHS]: אֲטֻמ֡וֹת Ezek. 40.16 ‘narrowing (fp)’)

bete (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 54.5 | L [BHS]: בֶּ֖טַח Gen. 34.25 ‘security’)

mesphat (Jerome, *Commentary on Isaiah*, ed. Gryson, II.42.6 | L [BHS]: לְמִשְׁפָּט֙ Isa. 5.7 ‘judgment’)

phaleta (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Joel, II, p. 197, line 783 | L [BHS]: פְּלֵיטָ֖ה Joel 3.5 'I will pour')

I.1.10. *Yod* י֫וֹד (י)

Palatal unrounded semi-vowel [j]; voiced palatal stop [ɟ] when geminated

Saadya states that the Tiberians pronounced *yod* with *dagesh* like Arabic *jīm*:

> As for *jīm*, it is in between *gimel* and *yod*. This is why the Tiberians pronounce it [i.e. *jīm*] when (reading) *yod* with *dagesh*.[90]

According to the early Arabic grammarians Sībawayhi and al-Khalīl (eighth century C.E.), *jīm* was realized as a voiced palatal stop [ɟ], which had the same place of articulation as the Arabic *yā*ʾ (the semi-vowel [j]), so presumably Saadya is referring to the realization of *yod* with *dagesh* as [ɟ], e.g. וַיַּשְׁמֵ֣ד [vaɟɟaʃˈmeːeð] 'and he destroyed' (1 Kings 16.12), which resulted from the strengthening of the articulation of [j] to a stop.[91]

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[90] ואמא אלג׳ים פפי מא בין אלגימל ואליוד, ולד׳לך ג׳עלהא אלטבראניון פי אליוד אלדגש, *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 42–43).

[91] In some of the early Arabic dialects geminated *yā*ʾ was pronounced like *jīm*; cf. Roman (1983, 101–6, 218). Ibn Sīnā in the eleventh century describes *jīm* as pronounced slightly further forward (Roman 1983, 243–46).

In many Non-Standard Tiberian manuscripts, a word-final consonantal *yod* is marked by a lower dot, which can be identified as a *ḥireq* vowel. Occasionally the *yod* is also marked with a *rafe* sign, e.g.

Genizah manuscripts

אֱלֹ֗הָֽיִ (T-S A12.1, Blapp 2017, 84 | L [BHS]: אֱלֹ֗הָֽי Prov. 30.9 ‘my God’)

שְׂפָ֫תַ֗יִ (T-S A13.18, Blapp 2017, 130 | L [BHS]: שְׂפָתַ֗י Psa. 89.35 ‘my lips’)

European manuscripts

מִצָּרָ֗יִֿ (Codex Reuchlinianus, Morag 1959, 220 | L [BHS]: מִצָּרַ֗י Isa. 1.24 ‘from my enemies’)

גֿוֹיִ֙ (BL Add 21161 | L [BHS]: גֿוֹי֙ Joel 1.6 ‘nation’)

In Babylonian vocalization, a *ḥireq* is marked not only on word-final consonantal *yod* but also on consonantal *yod* that occurs within a word, e.g.[92]

נׄטוּיִ (OB, Yeivin 1985, 277 | L [BHS]: נָט֥וּי Psa. 102.12 ‘bent’)

הׄגּוֹיִ (OB, Yeivin 1985, 277 | L [BHS]: הַגּ֣וֹי Jer. 18.8 ‘the nation’)

וׄיִהִי (OB, Yeivin 1985, 275 | L [BHS]: וַיְהִ֓י Ezek. 17.6 ‘and it became’)

חׄיִיל (MB, Yeivin 1985, 275 | L [BHS]: חַ֭יִל Prov. 31.10 ‘virtue’)

[92] Data supplied by Shai Heijmans.

Another strategy for marking word-final consonantal *yod* that is sporadically found in Non-Standard Tiberian is to write a dot within the body of the letter, which can be identified as a *mappiq* sign, e.g.

לְפָנַיִ (T-S A11.1, Blapp 2017, 51 | L [BHS]: לְפָנַ֑י Job 41.2 ‘before me’)

These strategies for marking word-final consonantal *yod* reflect the perception that the letter was a weak consonant and was vulnerable to being slurred over.

There is some sporadic evidence in various Greek transcriptions from the pre-Masoretic period of the weakening and contraction of *yod* where it is consonantal in the Masoretic tradition, e.g.[93]

Hexapla of Origen (c. 185–254 C.E.)

Final *ay* represented by *eta* possibly reflecting contraction to *ē* (Kantor 2017, 234):

ωεβη (Ambrosiana Palimpsest | L [BHS]: אֹיְבַ֣י Psa. 35.19 ‘my enemies’)

σωνη (Ambrosiana Palimpsest | L [BHS]: שֹׂנְאַ֥י Psa. 35.19 ‘those who hate me’)

Septuagint (third century B.C.E.)

Zero representation where consonantal *yod* appears in the Masoretic tradition:

[93] Data supplied by Ben Kantor.

Ἀλλnλί (Göttingen Septuagint | L [BHS]: הַיַּחְלְאֵלִֽי Num. 26.26 'Jahleelite')

Ἀσιηλί (Göttingen Septuagint | L [BHS]: הַיַּחְצְאֵלִ֑י Num. 26.48 'Jahzeelite')

Ἐτεβάθα (Göttingen Septuagint | L [BHS]: בְּיָטְבָֽתָה Num. 33.33 'Jotbathah')

In some of the biblical Dead Sea scrolls, an *ʾalef* occasionally appears where there is consonantal *yod* in the Masoretic tradition, which reflects weakening, e.g.[94]

אהרוג (1QIsa[a] 13.3 | L [BHS]: יַהֲרֹֽג Isa. 14.30 'it/he will kill')

הראה (1QIsa[a] 16.22 | L [BHS]: אַרְיֵ֑ה Isa. 21.8 'lion')

גואים (1QIsa[a] 18.8 | L [BHS]: גּוֹיִֽם Isa. 23.3 'nations')

שפאים (1QIsa[a] 34.23 | L [BHS]: שְׁפָיִם֙ Isa. 41.18 'hilltops')

אואב (4Q98g f1.6 | L [BHS]: אוֹיֵ֣ב Psa. 89.23 'enemy')

I.1.11. *KAF* כַּף (כ, ך)

Kaf with *dagesh* (כּ): unvoiced aspirated velar stop [kʰ]

Kaf without *dagesh* (כ): unvoiced uvular fricative [χ]

A *kaf* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

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[94] Data supplied by Aaron Hornkohl.

According to *Hidāyat al-Qāriʾ*, *kaf* with *dagesh* was articulated with ‘the middle of the tongue.’[95] *Kaf* without *dagesh*, on the other hand, was articulated further back, on the posterior ‘third of the tongue, which is adjacent to the pharynx, opposite the (soft) palate.’[96] In the Karaite transcriptions fricative *kaf* is represented by Arabic *khāʾ*, which was pronounced as an unvoiced uvular fricative,[97] e.g.

لاخول (BL Or 2539 MS A, fol. 74r, 2 | L [BHS]: לֶאֱכֹ֑ל Gen. 24.33 ‘to eat’)

بسباخ (BL Or 2539 MS A, fol. 68r, 3 | L [BHS]: בַּסְּבַ֖ךְ Gen. 22.13 ‘in the thicket’)

بعيناخا (BL Or 2539 MS A, fol. 63v, 2 | L [BHS]: בְּעֵינֶ֑יךָ Gen. 21.12 ‘in your (ms) eyes’)

Greek transcriptions from the pre-Masoretic period represent plosive *kaf* with the letter χ, which represented an aspirated voiceless velar stop [k^h] until the Byzantine period, rather than ϰ, which represented an unaspirated [k]. This

[95] Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fols. 10a-10b, lines 61-73).

[96] Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fol. 10a, lines 58-59).

[97] Roman (1983, 218).

demonstrates that plosive *kaf* at the time of these transcriptions was aspirated, e.g.[98]

Septuagint (third century B.C.E.)

> *Χαναναῖοι* (Göttingen Septuagint | L [BHS]: וְהַֽכְּנַעֲנִ֖י Gen. 12.6 'Canaanite')
>
> *Χάσαδ* (Göttingen Septuagint | L [BHS]: כֶּ֥שֶׂד Gen. 22.22 'Chesed')
>
> Χαλὲβ (Göttingen Septuagint | L [BHS]: כָּלֵ֖ב Num. 13.6 'Caleb')
>
> *Ἀσχανὰζ* (Göttingen Septuagint | L [BHS]: אַשְׁכְּנַ֖ז Gen. 10.3 'Ashkenaz')

Hexapla of Origen (c. 185–254 C.E.)

> *χααφαρ* (Ambrosiana Palimpsest | L [BHS]: כְּעָפָ֣ר Psa. 18.43 'like dust')
>
> *χαμμα* (Ambrosiana Palimpsest | L [BHS]: כַּמָּ֪ה Psa. 35.17 'how long/much ... ?')
>
> *χελλωθαμ* (Ambrosiana Palimpsest | L [BHS]: כַּלּוֹתָֽם Psa. 18.38 'wiping them out')
>
> *δερχω* (Ambrosiana Palimpsest | L [BHS]: דַּרְכּ֑וֹ Psa. 18.31 'his way')

Likewise, in the Tiberian pronunciation tradition, plosive *kaf* was almost certainly aspirated. In the Karaite transcriptions,

[98] Data supplied by Ben Kantor.

plosive *kaf* with *dagesh* is represented by Arabic *kāf*, which was an aspirated stop.[99]

Hidāyat al-Qāriʾ describes the stop [k^h] as primary (*ʾaṣl*) and the fricative [χ] as secondary (*farʿ*).[100]

I.1.12. *LAMED* לָמֶד (ל)

Voiced alveolar lateral continuant [l]

In *Hidāyat al-Qāriʾ* the name of this letter is spelt למאד, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name לָמֶד, with stress on the final syllable.

According to *Hidāyat al-Qāriʾ*, the articulation of this letter involved the contact of the tongue tip with the gums.[101]

I.1.13. *MEM* מֵם (מ, ם)

Voiced bi-labial nasal [m]

In *Hidāyat al-Qāriʾ* the name of this letter is spelt מאם.

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[99] Roman (1983, 55).

[100] Long version, edition in vol. 2 of this book, §II.L.1.3.6. Ed. Eldar (1980, fols. 8b, 10a, 254, n.58). Watson (2007, 43–44) considers the uvular fricative [χ] in Modern Arabic dialects to be the emphatic counterpart of the dorsal [k^h], involving a primary dorsal and non-primary ‘guttural’ feature.

[101] Long version, edition in vol. 2 of this book, §II.L.1.3.7. Ed. Eldar (1980, fol. 10b, lines 67–69). See the description of *dalet* (§I.1.4.) for a discussion of the passage.

I.1.14. *NUN* נוּן (נ, ן)

Voiced alveolar nasal [n]

According to *Hidāyat al-Qāriʾ*, it was articulated with the end of the tongue and the gums.[102]

I.1.15. *SAMEKH* סָמֶךְ (ס)

Unvoiced alveolar sibilant [s]

In *Hidāyat al-Qāriʾ* the name of this letter is spelt סמאך, which appears to reflect a different pronunciation from that of the normal Hebrew form of the name סָמֶךְ, with stress on the final syllable.

According to the medieval sources, it was articulated in the same place as the letter *zayin*,[103] apparently with the blade of the tongue rather than the tip (see the description of *zayin* §I.1.7.).

In some medieval Muslim sources, the *samekh* in the name פִּנְחָס 'Phinehas' is transcribed by *ṣād* [sˤ]: فنحاص (Schreiner 1886, 254). This apparently reflects its pharyngealization after the pharyngeal *ḥet*.

[102] Long version, edition in vol. 2 of this book, §II.L.1.3.7. Ed. Eldar (1980, fol. 10b, lines 67–68). lbn Janāḥ (*Kitāb al-lumaʿ*, ed. Derenbourg, 27-28) distinguishes between the *nun* with a following vowel, which was pronounced with an admixture of nasal resonance, and *nun* without a vowel, which was articulated entirely in the nasal cavity.

[103] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.3; ed. Eldar (1980, fol. 10b, line 77); *Sefer Yeṣira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

Sporadic examples of the pharyngealization of *samekh* in the environment of pharyngeals is attested in the Dead Sea scrolls, e.g.[104]

> ועוצותם (4Q76 4.12 | L [BHS]: וְעַסּוֹתֶ֣ם Mal 3.21 'and you [pl] will trample')

I.1.16. ʿ*AYIN* עַ֫יִן (ע)

Voiced pharyngeal fricative [ʕ]

This letter is transcribed by Arabic *ʿayn* (voiced pharyngeal fricative) in the Karaite transcriptions, e.g.

> عينَاها (BL Or 2539 MS A, fol. 64v, 3 | L [BHS]: עֵינֶ֫יהָ־ Gen. 21.19 'her eyes')

> ويَاعس (BL Or 2539 MS A, fol. 63r, 3 | L [BHS]: וַיַּ֖עַשׂ Gen. 21.8 'and he made')

> سماع (BL Or 2539 MS A, fol. 63v, 3 | L [BHS]: שְׁמַ֣ע Gen. 21.12 'hear!')

Hidāyat al-Qāriʾ does not distinguish between the place of articulation of the laryngeals and that of the pharyngeals. Some medieval grammarians, however, state that *ḥet* and its voiced counterpart *ʿayin* were articulated less deep in the throat than *ʾalef* and *he* (see §I.1.8.).

In the Standard Tiberian tradition, *ʿayin* does not take *dagesh*. According to *Hidāyat al-Qāriʾ*, the letter *ʿayin* could not be

[104] Data supplied by Aaron Hornkohl.

made ‘heavy’ by *dagesh*,[105] i.e. the consonant could not be pronounced with different degrees of muscular pressure. Also in Non-Standard Tiberian manuscripts, where the use of *dagesh* has been extended, *ʿayin* does not take *dagesh*.

In Palestinian vocalization *dagesh* is sporadically marked on *ʿayin*, it seems as a measure to ensure that it was pronounced correctly and not weakened, e.g.

> עׄתׁי (T-S NS 249.6, Dietrich 1968, 74* | L [BHS]: עַתָּ֥י 1 Chron. 2.35 ‘Attai’)

> [פר]עׄ[ה] (T-S A43.1, Kahle 1930, 94 | L [BHS]: פַּרְעֹ֧ה Jer. 25.19 ‘Pharaoh’)

In Non-Standard Tiberian manuscripts, *ʿayin* is occasionally marked with a *rafe* sign, marking the letter as consonantal but not geminated, e.g.

> יַֽעֲֿרֹ֣ךְ (T-S A13.18, Blapp 2017, 140 | L [BHS]: יַֽעֲר֣ךְ Psa. 89.7 ‘is comparable’)

> לָעׇֿם (T-S A13.20, Blapp 2017, 177 | L [BHS]: לָ֫עָ֥ם Psa. 68.36 ‘to the people’)

The *rafe* sign is occasionally found on *ʿayin* also in Palestinian vocalization, e.g.

> עֿיׄנׄי (T-S NS 249.3, Dietrich 1968, 128 | L [BHS]: עֵינָ֑י Psa. 77.5 ‘my eyes’)

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105 *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.3.2., §II.L.1.3.3.

In many Non-Standard Tiberian manuscripts a word-final *ʿayin* is marked with *shewa*, indicating that it was a consonant that closed a syllable, e.g.

Genizah manuscripts

הוֹדַ֫עְ (T-S A13.18, Blapp 2017, 127 | L [BHS]: הוֹדַ֑ע Psa. 90.12 'teach!')

רָשָׁ֫עְ (T-S A13.20, Blapp 2017, 156 | L [BHS]: רָשָׁ֑ע Psa. 71.4 'wicked')

European manuscripts

וַיִּשְׁמַ֫עְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וַיִּשְׁמַ֤ע 2 Sam. 22.7 'and he heard')

הָרַ֫עְ (ACAMO 28 2v, Pilocane 2004, 29 | L [BHS]: הָרַ֖ע 'evil' 1 Kings 16.25)

The use of *dagesh*, *rafe* and *shewa* in the manuscripts with Non-Standard Tiberian and Palestinian vocalization reflect the perceived vulnerability to weakening of the *ʿayin*. Similar strategies of vocalization were also used for other gutturals in these manuscripts (§I.1.1, §I.1.5., §I.1.8.).

Within the Standard Tiberian reading tradition a *ʿayin* was prevented from potential weakening in some contexts by lengthening the vowel before it (§I.2.10.), e.g. שְׁמַֽעְיָ֫הוּ [ʃaˌmaˑʕˈjɔːhuː] 'Shemaiah (2 Chron. 11.2), שְׁמַֽע־נָ֫א [ʃaˌmaˑʕ-ˈnɔː] 'listen' (1 Sam. 28.22). Another strategy to protect the consonantal pronunciation of *ʿayin* at the end of a word-internal syllable was to place a *dagesh* in the following letter (§I.3.1.11.2.). This is found in some early manuscripts (Yeivin 1980, 295; Ginsburg 1897, 133), e.g.

C: יַעְקֹ֫ב (L [BHS]: יַעְקֹ֫ב ‘he supplants’ Jer. 9.3)

There is clear evidence from the Dead Sea scrolls of the weakening of *ʿayin* in some biblical reading traditions in the Second Temple period, especially that of 1QIsa^{a}. This is reflected, for example, by the omission of *ʿayin* where it occurs in the Standard Tiberian Masoretic Text, or its replacement by *ʾalef* or *he*, e.g.[106]

יבור (1QIsa^{a} 22.19 | L [BHS]: K עבר Q יַֽעֲבֹ֔ר Isa. 28.15 ‘[the flood/whip] shall pass’)

משתריים (1QIsa^{a} 22.26 | L [BHS]: מֵֽהִשְׂתָּרֵ֑עַ Isa. 28.20 ‘[is too short] to stretch out’)

זׄלפות רׄעב (5Q6 f1v.6 | L [BHS]: זַלְעֲפ֖וֹת רָעָֽב Lam. 5.10 ‘fever from hunger’)

נטה (4Q27 f24ii+27–30.18 | L [BHS]: נָטַ֣ע Num. 24.6 ‘[Yhwh] planted’)

מסלה (1QIsa^{a} 13.17 | L [BHS]: מִסֶּ֖לַע Isa. 16.1 ‘from Sela’)

ואתה (1QIsa^{a} 4.16 | L [BHS]: וְעַתָּ֕ה Isa. 5.5 ‘and now’)

אצית (1QIsa^{a} 19.27 | L [BHS]: עֵצ֖וֹת Isa. 25.1 ‘counsel’)

In the modern Samaritan reading tradition *ʿayin* has weakened in most contexts to *ʾalef* or zero (Ben-Ḥayyim 2000, 38–39), e.g.[107]

ʾaz (L [BHS]: עֵ֕ז Lev. 3.12 ‘goat’)

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[106] Data supplied by Aaron Hornkohl. Cf. also Reymond (2014, 92).

[107] Data supplied by Aaron Hornkohl.

yišmå̄ʾu (L [BHS]: יִשְׁמְע֔וּ Gen. 11.7 'they will (not) understand')

miyyūlåm (L [BHS]: מֵעוֹלָ֖ם Gen. 6.4 'of old')

šār (L [BHS]: שֵׂעָֽר Gen. 25.25 'hair')

šū (L [BHS]: שׁ֑וּעַ Gen. 38.2 'Shua')

The measures taken to ensure the correct reading of the *ʿayin* in the medieval manuscripts described above show that a special effort had to be made to avoid its being weakened in the transmission of the Masoretic biblical reading traditions still in the Middle Ages.

I.1.17. *Pe* פֵּה (פ, ף)

Pe with *dagesh* (פּ): unvoiced aspirated bi-labial stop [pʰ]

Pe without *dagesh* (פ): unvoiced labio-dental fricative [f]

A *pe* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

In Masoretic treatises the name of this letter is sometimes spelt פי or פא.[108]

According to *Hidāyat al-Qāriʾ, pe* with *dagesh* was pronounced by closing the lips firmly and *pe* without *dagesh* was pronounced by closing the lips lightly.[109] Taken by itself, this could be a description of a bilabial articulation [ɸ]. This appears,

[108] E.g. *Hidāyat al-Qāriʾ*, short version, edition in vol. 2 of this book, §II.S.1.7.

[109] Long version, edition in vol. 2 of this book, §II.L.1.3.9.; ed. Eldar (1980, fols. 10b-11a, lines 84-88).

however, to be only a partial description of the sound, as is the case with the description of *bet* without *dagesh* (see §I.1.2.). The light closure of the lips would have accompanied a labio-dental articulation [f] and no doubt it is this secondary feature that the author refers to.[110]

We know from Greek and Latin transcriptions that in the pre-Masoretic period plosive *pe* was aspirated.[111] This is shown by the fact that it is represented in Greek by φ, which in the periods in question represented an aspirated stop [p^h], and in Latin by the digraph *ph*, the *h* reflecting aspiration [p^h]. Greek π and Latin *p* represented unaspirated [p]. Examples:[112]

Septuagint (third century B.C.E.):

Φαλτιὴλ (Göttingen Septuagint | L [BHS]: פַּלְטִיאֵ֫ל Num. 34.26 'Paltiel')

Ἀρφαξὰδ (Göttingen Septuagint | L [BHS]: וְאַרְפַּכְשַׁ֖ד Gen. 10.22 'Arpachshad')

Ζέλφα (Göttingen Septuagint | L [BHS]: זִלְפָּ֫ה Gen. 30.12 'Zilpah')

Hexapla of Origen (c. 185–254 C.E.)

φααδ (Ambrosiana Palimpsest | L [BHS]: פַּ֫חַד Psa. 36.2 'fear of (cstr.)')

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[110] Cf. the commentary to this passage by Eldar (1980, n.75.).

[111] Kutscher (1965, 24–35).

[112] Data supplied by Ben Kantor.

φαδιθ (Ambrosiana Palimpsest | L [BHS]: פָּדִ֫יתָה Psa. 31.6 'you redeemed')

φαλητ (Ambrosiana Palimpsest | L [BHS]: פַּלֵּ֥ט Psa. 32.7 'deliverance')

αρφαθ (Ambrosiana Palimpsest | L [BHS]: חֶרְפַּ֣ת Psa. 89.51 'the reproach of (cstr.)')

λαμεσφατι (Ambrosiana Palimpsest | L [BHS]: לְמִשְׁפָּטִ֑י Psa. 35.23 'to my judgment')

Jerome (346-420 C.E.)

pharis (Jerome, *Commentary on Ezekiel*, ed. Glorie, VI.18.504 | L [BHS]: פָּרִ֖יץ Ezek. 18.10 'violent one')

phacud (Jerome, *Commentary on Ezekiel*, ed. Glorie, VII.23.1001 | L [BHS]: פְּק֞וֹד Ezek. 23.23 'Pekod')

iesphicu (Jerome, *Commentary on Isaiah*, ed. Gryson, I.52.4 | L [BHS]: יַשְׂפִּֽיקוּ׃ Isa. 2.6 '[they] clap')

mesphat (Jerome, *Commentary on Isaiah*, ed. Gryson, II.42.6 | L [BHS]: לְמִשְׁפָּט֙ Isa. 5.7 'judgment')

Saadya refers to the existence of a 'hard *pe*' (*al-fāʾ al-ṣulba*) in the hapax legomenon אַפַּדְנ֔וֹ 'his palace' (Dan. 11.45), which he describes as 'between *bet* and *pe* with *dagesh*'.[113] This appears to be referring to an unaspirated, fortis realization of [p]. One may infer from this that the normal unvoiced stop *pe* was aspirated also in the Middle Ages. Dunash ibn Tamim reports that the

[113] פי מא בין אלבי ואלפי אלדגש, *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 42).

scholar Isaac Israeli (ninth-tenth centuries), who was 'an expert in the reading of the Tiberians', pronounced the *dalet* in this word like an Arabic *ḏ̣āʾ*, i.e. as emphatic (pharyngealized).[114] This implies that the 'hard' *pe* was also emphatic, the *dalet* being pronounced emphatic by assimilation (Steiner 1993).

The word אַפַּדְנוֹ is a loanword from Old Persian. The source word in Old Persian is reconstructed by Iranists as *apadāna, āpadāna* or *appadāna* 'palace, audience chamber'. The *p* in Old Persian was unaspirated. The lack of aspiration was preserved when the word was loaned into Hebrew and this was transmitted in the Tiberian oral tradition down to the Middle Ages. There is no consensus among Iranists about the length of the initial vowel in the Old Persian word and whether the *p* was geminate or not (Ciancaglini 2008, 113–14). According to Henning (1944, 110 n.1), the *p* was originally geminated but the gemination of the Old Persian *p* was lost in Middle Persian (Old Persian *appadān* > Middle Persian **āpaðan*). In the Tiberian tradition, the *pe* is geminated, which could, therefore, be an ancient feature. The antiquity of the gemination is shown, moreover, by the fact that the Old Persian word appears as a loanword in an Akkadian text datable to the Late Babylonian period where the *p* is represented as geminated: *ap-pa-da-an* (*appadān*).[115]

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[114] Dunash ibn Tamim, *Commentary on Sefer Yeṣira* (ed. Mann 1931, 1:670, n.106). For this passage see §I.1.4.

[115] *The Assyrian Dictionary of the Oriental Institute of the University of Chciago*, A/2 (1968), Chicago: Oriental Institute, 178.

There is evidence for the unaspirated pronunciation of the *pe* in this word in Greek and Latin transcriptions in the pre-Masoretic period, e.g.[116]

Απαδανω (Theodoretus, fifth century C.E., *Commentarius in Visiones Danielis Prophetae*, e.g. Migne, 81.1532)

apedno (Jerome, fourth century C.E., *Commentarii in Danielem*, ed. Glorie, IV.11)

In these transcriptions the *pe* is represented by Greek π and Latin *p* without following *h*, both of which represented unaspirated [p]. Jerome (*Commentarii in Danielem*, IV, 11–12) comments on the *pe* in this word as follows:

> Notandum autem quod cum pe littera hebraeus sermo non habeat, sed pro ipsa utatur phe cuius uim graecum φ sonat, in isto tantum loco apud Hebraeos scribatur quidem phe sed legatur pe.

> But it should be noted that while Hebrew speech does not have the letter *pe* (i.e. Latin *p* [p]), but instead of it uses *phe*, the force of which is approximated by the sound of Greek φ (i.e. [ph]), in that particular place (i.e. Dan. 11.45) among the Hebrews *phe* (i.e. פ [ph]) indeed is written but it is read as *pe* (i.e., Latin *p* [p]).

It should be noted, however, that some Greek transcriptions are extant that represent the *pe* in the word by φ, reflecting an aspirated pronunciation, e.g.

εφαδανω (Theodotion, second century C.E.)

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[116] Data supplied by Ben Kantor.

εφαδανω/αφαδανω (Polychronios, fifth century C.E., *Commentarii in Danielem*, ed. Moutsoulas, 11.45)

This suggests that there were variant traditions of reading the *pe*, some preserving the unaspirated *pe* others pronouncing the *pe* as aspirated.

Another feature of all the Greek and Latin transcriptions cited above is that they represent the *pe* as ungeminated, whereas it is geminated in Tiberian tradition.

The word appears in various dialects of Aramaic, including Syriac, Jewish Babylonian Aramaic and the Aramaic of Targum Jonathan (Sokoloff 2009, 81, 2002, 154). In Syriac, where there is a reliable tradition of vocalization, the *pe* is ungeminated: ܐܳܦܰܕܢܳܐ (*ʾāpadhnā*). There are, however, variant vocalizations of the word in the sources (Payne Smith 1879, 329–30). In some manuscripts, the *pe* is marked with a diacritic that is used elsewhere to represent the *pe* corresponding to an unaspirated π in Greek loanwords (J. B. Segal 1989, 489). The word appears in Arabic as *fadan* 'palace'.

The *pe* in אַפַּדְנוֹ in the Tiberian reading tradition was pronounced not only unaspirated but also pharyngealized. Elsewhere in the sound system of Tiberian Hebrew unaspirated unvoiced stops were pharyngealized, i.e. *ṭet* and *qof*. The feature of lack of aspiration did not exist in unvoiced stops without pharyngealization. Pharyngealization was, therefore, perceived to be the closest equivalent in the sound system of Tiberian Hebrew to the feature of lack of aspiration of the *pe*. This also applied to the sound system of the spoken language of the tradents of the reading tradition. At the time of Saadya and Isaac

Israeli, who report this feature, the spoken language was Arabic, in which unvoiced unaspirated stops were pharyngealized (i.e. the *ṭāʾ* and the *qāf*). It is not clear whether the pharyngealization of the *pe* in אַפַּדְנוֹ existed in the reading tradition in the pre-Islamic period. Greek unaspirated *τ* and *κ*, likewise, were perceived to correspond most closely to Hebrew emphatic *ṭet* and *qof*, as shown by Greek transcriptions of Hebrew, e.g. *Λώτ* (Septuagint, לֽוֹט Gen. 11.27 'Lot'), *Ἐνάκ* (Septuagint, עֲנָֽק Deut. 9.2 'Anak') and by Greek loanwords in Hebrew, e.g. פרסטלון 'colonnade' < *περίστυλον* (Copper Scroll 3Q15), קִיתָרוֹס (*ketiv* קתרוס) 'zither' < *κίθαρος* (Dan. 3.5, 7, 10, 15) (Heijmans 2013a).

A Masoretic note to Dan. 3.21 in L reads as follows

ג̇ מפק̇ פּ̇ בפומיהון וסימנהון פסנתרין פטשיהון אפדנו משנין לקראה

The meaning of this is not fully clear. One possible interpretation is as follows:

> There are three cases where *pe* is pronounced differently by the reader, namely פְּסַנְתֵּרִין 'stringed instrument' (Dan. 3.5, 3.7, 3.10, 3.15), פַּטְּשֵׁיהוֹן 'their tunics' (*ketiv* פטישיהון Dan. 3.21), אַפַּדְנוֹ 'his palace' (Dan. 11.45).

This suggests that the *pe* also of the words פְּסַנְתֵּרִין and פַּטְּשֵׁיהוֹן, which occur in the Aramaic section of the Bible, were pronounced unaspirated. The word פְּסַנְתֵּרִין is a loan from Greek *ψαλτήριον*, so the *pe* would correspond to the unaspirated segment in the affricate ψ [ps]. The word פַּטְּשֵׁיהוֹן is of uncertain etymology, but it has been suggested by Nyberg (1931, 187) that the source is Old Persian **patuš* 'garment', in which case the *pe* would correspond to an Old Persian unaspirated *p*. The *ṭet* in the word would, moreover, reflect the Old Persian unaspirated *t*.

It should be noted that there are a number of other Old Persian loanwords in Biblical Hebrew in which a Hebrew *pe* corresponds to an unaspirated *p* in the Old Persian source word but which were pronounced aspirated in the Tiberian Hebrew reading tradition, e.g. אֲחַשְׁדַּרְפְּנִים 'satrap' (< Old Persian *xšaθra-pāwan*) (Esther 3.12, 8.9, 9.3; Ezra 8.36), פִּתְגָם 'message' (< Old Persian **patiy-gama*) (Ecc. 8.11; Esther 1.20), פַּתְשֶׁגֶן 'a copy' (< Old Persian **patiy-caγniya* or **patiy-caγna*) (Esther 3.14, 4.8, 8.13) (Gindin 2013). It would appear that in such cases the original unaspirated *p* was adapted to the sound system of Hebrew. Greek transcriptions such as εφαδανω (Theodotion, second century C.E.) and εφαδανω/αφαδανω (Polychronios, fifth century C.E.), cited above, would reflect a similar adaption of the *pe* also in the word אַפַּדְנ֫וֹ in some reading traditions.

I.1.18. *ṢADE* צָדֵי (צ, ץ)

Unvoiced emphatic (pharyngealized) alveolar sibilant [sˤ]

The name of the letter is vocalized צְדֵ֫י in a Masoretic treatise (ed. Allony and Yeivin 1985, 102), with *shewa* in the initial syllable, reflecting a pronunciation with stress on the final syllable.

According to the medieval sources, it was articulated in the same place as the letters *zayin* and *samekh*,[117] apparently with the blade of the tongue rather than the tip (see the description of *zayin* §I.1.7). In the Karaite transcriptions, it is represented by

[117] *Hidāyat al-Qāri*ʾ, Long version, edition in vol. 2 of this book, §II.L.1.3.8.; ed. Eldar (1980, fol. 10b, line 77), *Sefer Yeṣira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

Arabic *ṣād*, which was an unvoiced pharyngealized alveolar sibilant [sˁ], e.g.

صباۤو (BL Or 2539 MS A, fol. 64v, 9 | L [BHS]: צְבָאֹו־ Gen. 21.22 'his host')

مصرايم (BL Or 2539 MS A, fol. 92r, 6 | L [BHS]: מִצְרָֽיִם־ Deut. 7.18 'Egypt')

In §I.1.7. references are given to what appears to have been a voiced emphatic variant of *ṣade* [zˁ].

A Karaite transcription is extant in which Arabic *sīn* is written where the Masoretic Text has *ṣade*, reflecting the weakening of the emphatic pronunciation:

وفوريس (BL Or 2555 fol. 111v, 3 | L [BHS]: וּפֹרֵ֥ץ Ecc. 10.8 'and he who breaks')

I.1.19. *Qof* קוף (ק)

Unvoiced advanced uvular unaspirated plosive [q̟]

According to *Hidāyat al-Qāriʾ*, *qof* was articulated with the 'middle of the tongue', and so further forward than fricative *gimel* and *kaf*, which were pronounced with the 'back third of the tongue'.[118] This suggests an advanced uvular point of articulation. In the Karaite transcriptions, this letter is represented by Arabic *qāf*, e.g.

[118] Long version, edition in vol. 2 of this book, §II.L.1.3.6.; ed. Eldar (1980, fols. 10a–10b, lines 61–72).

حالاق (BL Or 2539 MS A, fol. 85v, 4 | L [BHS]: חָלַק Deut. 4.19 ‘he divided’)

وباقار (BL Or 2539 MS A, fol. 74r, 5 | L [BHS]: וּבָקָר Gen. 24.35 ‘and cattle’)

لزقوناو (BL Or 2539 MS A, fol. 63r, 2 | L [BHS]: לִזְקֻנָיו׃ Gen. 21.7 ‘in his old age’)

According to the medieval Arabic grammarians, *qāf* was unaspirated and articulated between the velar stop *kāf* and the uvular fricatives *khāʾ* and *ghayn* (Roman 1983, 110), i.e. in advanced uvular position. It is the emphatic counterpart of the dorsal velar stop *kāf* (Jakobson 1978; Watson 2007, 43–44).

The lack of aspiration of *qof* is reflected by Greek and Latin transcriptions from the first half of the first millennium C.E. In these the letter is transcribed by Greek *κ* and Latin *c* or *g*, which represented unaspirated stops, e.g.[119]

Septuagint (third century B.C.E.)

Κεδαμὼθ (Göttingen Septuagint | L [BHS]: קְדֵמוֹת Deut. 2.26 ‘Kedemoth’)

Ἐνάκ (Göttingen Septuagint | L [BHS]: עֲנָק Deut. 9.2 ‘Anak’)

Hexapla of Origen (c. 185–254 C.E.)

κουμ (Ambrosiana Palimpsest | L [BHS]: קוּם Psa. 18.39 ‘to rise’)

[119] Data suppied by Ben Kantor.

ουακισα (Ambrosiana Palimpsest | L [BHS]: וְהָקִ֣יצָה Psa. 35.23 'awake! (ms)')

Jerome (346-420 C.E.)

cira (Jerome, Commentary on the Minor Prophets, Amos, ed. Adriaen, I.1, 217 | L [BHS]: קִֽירָה Amos 1.5 'Kir')

boger (Jerome, Commentary on the Minor Prophets, Amos, ed. Adriaen, III.7, 324 | L [BHS]: בוֹקֵ֥ר Amos 7.14 'herdsman')

I.1.20. *RESH* רֵ֫ישׁ (ר)

(i) Voiced advanced uvular trill [ʀ̟] or advanced uvular frictionless continuant [ʁ̞̟] and (ii) pharyngealized apico-alveolar trill [rˤ]

According to *Hidāyat al-Qāriʾ*, the Tiberians pronounced *resh* in two different ways, as was the case with the letters בגדכפת.

Its basic articulation was with 'the middle third of the tongue', as was the case with *qof* and plosive *kaf*, suggesting an advanced uvular position. It is not made clear whether it was a trill [ʀ̟] or frictionless continuant [ʁ̞̟]. In what follows, it will be transcribed as an advanced uvular trill [ʀ̟].[120]

The secondary pronunciation of *resh* is said in the medieval sources to occur in the environment of the alveolar consonants דזצתטסלן and can be inferred to be an apical alveolar trill. It is described by *Hidāyat al-Qāriʾ* as being intermediate in status

[120] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.3.6.; Eldar (1984a).

(*manzila bayna manzilatayn* 'grade between two grades'), i.e. intermediate between the simple primary *resh*, which is described as 'light' (*khafīf*), and geminated *resh* marked with the *dagesh* sign in the Tiberian vocalization, which is termed 'major *resh*' (*al-resh al-kabīr*).[121] When contrasting it with the primary *resh*, *Hidāyat al-Qāriʾ* describes the secondary *resh* as having the feature of 'heaviness' (*thiqal*) whereas the simple *resh* has the feature of 'lightness' (*khiffa*).[122] The intermediate status of the secondary *resh*, therefore, can be identified as being an intermediate degree of muscular tension, between the light advanced uvular *resh* and the maximal degree of muscular tension brought about by the gemination of the *resh*. The instances of geminated *resh* marked with *dagesh* in the Standard Tiberian reading tradition appear to have lengthened forms of the primary *resh*, i.e. advanced uvular trills. They do not occur in the contexts that are said to condition the secondary alveolar *resh*. So geminated *resh* רּ may be transcribed [ʀ̟ʀ̟], e.g. הַרְּעִמָֽהּ [hɑʀ̟ʀ̟iʕiːˈmɔːɔh] 'to irritate her' (1 Sam. 1.6).

[121] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.9.6.; Eldar (1984a).

[122] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.9.5., §II.L.1.9.7. The Hebrew *Maḥberet ha-Tījān* (ed. J. Derenbourg 1871, 81) states that the Tiberians pronounced this *resh* strongly (מחזקים). An anonymous Masoretic treatise preserved in the Genizah fragment CUL T-S NS 311.113 states that the Tiberians pronounced the *resh* with *dagesh* (ידגשוהא), but 'in our country we do not know (this pronunciation)'. This is presumably referring to the Tiberain secondary *resh*.

We know from various sources that the Hebrew letter *resh* had two different types of pronunciation in the Middle Ages. The earliest text referring to this is *Sefer Yeṣira*:

> There are seven double letters, בג״ד כפר״ת. These are pronounced in two ways, which are two opposites—soft and hard, a strong structure as opposed to a weak one.[123]

In his commentary on *Sefer Yeṣira,* Saadya discusses the double pronunciation of the Hebrew *resh*. He states that the letters בגדכפרת are called double (*muḍāʿafa*) 'because each of the letters is pronounced with two pronunciations, a hard pronunciation and a soft pronunciation'.[124] He refers to a difference between the Tiberian and Babylonian pronunciations of *resh*:

> As for the double nature of the *resh,* the Tiberians have it in their reading of the Bible, whereas the Iraqis have it in their speech but not in their reading of the Bible. They call one type *resh makrūkh* and the other *ghayr makrūkh* ('not *makrūkh*'). As for the customs of the Iraqis in this matter, we have examined them but have found no principle uniting them. As for the customs of the Tiberians, we shall mention them in the commentary on the fourth part of this book.[125]

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[123] שבע כפולות בג״ד כפר״ת ... ומתנהגות לשונות כפולות שלתמורות: בית בית, גימל גימל, דל דל, כף כף, פה פה, ריש ריש, תיו תוי כנגד רך וקשה תבנית גיבור כנגד חלש (ed. Gruenwald 1971, 156; ed. Hayman 2004, 54). For variant versions see Hayman (2004, 51, 127).

[124] לאן כל חרף מנהא יכׄרג בצותין צות כׄשן וצות ליין (ed. Lambert 1891, 29).

[125] ואמר תצׄאעף אלריש פאנה ללטבראניין פי אלמקרא, וללעראקיין פי כלאמהם לא פי פאמא רסום אלעראקיין פי דׄלך .אלמקרא, ויקולון הדׄא ריש מכרוך וריש גיר מכרוך

Elsewhere in his commentary on *Sefer Yeṣira* Saadya refers to the 'hard' *resh* as *resh dagesh* and the 'soft' *resh* as *resh rafe*.[126]

The word *makrūkh*, which is used by Saadya in the passage cited above, has been interpreted by scholars in various ways.[127] The most satisfactory interpretation is that it is an Arabicized form of the Hebrew word כָּרוּךְ 'wrapped up, closed up', analogous to the forms *madgūsh* 'with *dagesh*' and *marfī* 'with *rafe*', which are widely attested Arabicizations of the Hebrew terms דָּגוּשׁ and רָפוּי. The term כָּרוּךְ is found in Masoretic sources in reference to closed syllables, as in the following passage from *Diqduqe ha-Ṭeʿamim*:

> אם לשון ברכה עם בי״ת משוכה ובו הטעם תמוכה לעולם היא כרוכה כמו והתבָּרְכו בו ... ואם על כ״ף טעמו יפתח נאמו ובלשון ינעימו כמו ואבָרֲכָה

פאלתמסנאהא פלם נגֿד להא אצלא יגֿמעהא. ואמא רסום אלטבראניין פאנא נדֿכרהא פי תפסיר אלפרק אלראבע מן הדֿא אלכתאב (ed. Lambert 1891, 46). In part four Saadya describes how the hard *resh* occurs in certain phonetic environments (see below).

[126] Ed. Lambert (1891, 79). In some medieval sources describing the two different types of Tiberian *resh* the terms *dagesh* and *rafe* are confused. This is the case, for example, in *Diqduqe ha-Ṭeʿamim* (ed. Baer and Strack 1879, §7) and the Hebrew *Maḥberet al-Tījān* (ed. J. Derenbourg 1871, 138). According to Revell (1981, 133) this confusion arose from the fact that in the few cases where the *dagesh* sign is marked in the *resh* in the Tiberian text, the *resh* is not preceded by the letters דזצתטסלן nor is it followed by לן. A *resh* that did occur in the environment of these letters was, therefore, considered to be *rafe.* Such sources, or the versions that have come down to us, must have been written by scribes who had no direct knowledge of the Tiberian pronunciation tradition.

[127] Morag (1960, 217–19).

> מְבָרֲכֶיךָ ... חוץ מאחד במקרא מיוחד כי על כ״ף טעמו ולא יפתח בנאמו מנדעי עלי יתוב ולעלאה בָּרְכֵת
>
> If a form of the root בר״ך has a *bet* with a vowel and the accent falls on it (i.e. the *bet*), it is always pronounced 'closed up' as in וְיִתְבָּרְכוּ בֽוֹ 'and may they bless themselves by him' (Psa. 72.17) … But if the accent falls on the *resh*, it is opened up in speech and pronounced with a vowel as in וַאֲבָֽרְכָה֙ מְבָ֣רְכֶ֔יךָ 'and I will bless those who bless you' (Gen. 12.3) … Except for one word, which is unique in the Bible, for its accent falls on the *kaf* but it is not opened up in speech: וּמַנְדְּעִי֙ עֲלַ֣י יְת֔וּב וּלְעִלָּאָה֙ בָּרְכֵ֔ת 'and my reason returned to me and I blessed the Most High' (Dan. 4.31).[128]

In this passage, the term כרוך is used to describe forms in which a *shewa* is silent, i.e. the *shewa* coincides with the closure of the syllable. The opposite of כרוך is when יפתח בנאם, which literally means 'it is opened up in speech'. This refers to the fact that the *shewa* is vocalic.

In the phrase *resh makrūkh*, the term is a calque of the Arabic phonetic term *muṭbaq* (literally 'closed, covered'), which was used in the medieval Arabic grammatical tradition to refer to emphatic consonants, i.e. pharyngealized consonants.[129] A non-emphatic letter was referred to in the Arabic grammatical tradition by the term *munfatiḥ* 'open'. The description of the Arabic emphatic letters by the grammarian Sībawayhi (eighth century C.E.) is as follows:

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[128] Ed. Baer and Strack (1879, §53). For variant texts of this passage see ed. Dotan (1967, 140, 263).

[129] For details see Khan (1995).

> When you position your tongue in the places of articulation of these four (emphatic) letters, your tongue forms a cover/closure extending from their place of articulation until the palate. You raise the back of the tongue towards the palate and when you have positioned your tongue thus, the sound is compressed between the tongue and the palate up to the place of articulation of the letters.[130]

The terminological opposition between כרוכה and יפתח בנאם in the passage from *Diqduqe ha-Ṭeʿamim* above would, therefore, be directly parallel to the contrasting pair of terms *muṭbaq* vs. *munfatiḥ*, which designated emphatic vs. non-emphatic consonants.

This variant of *resh*, therefore, was pronounced pharyngealized. Evidence for such an interpretation is found in the report by Dunash ibn Tamim that his teacher Isaac Israeli (tenth century), 'an expert in the Tiberian reading tradition', pronounced the *dalet* in the word וַֽיַּדְרְכ֤וּ 'and they bent' (Jer. 9.2) like the pharyngealized Arabic letter *ḍād* (ויצ̇רכו את לשונם), by which he meant a pharyngealized voiced interdental [ðˤ]. This must have arisen by the spreading the pharyngealization of the contiguous *resh*.[131]

In a fragment of a Masoretic treatise datable to the tenth century, it is stated that this variant of *resh* 'is pronounced with a turning of the tongue' (*yuqāl bi-taqallub al-lisān*).[132] This seems

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[130] وهذه الحروف الاربعة اذا وضعت لسانك فى مواضعهن انطبق لسانك من مواضعهن الى ما حاذى الحنك الاعلى من اللسان ترفعه الى الحنك فاذا وضعت لسانك فالصوت محصور فى ما بين اللسان والحنك الى موضع الحروف, *al-Kitāb*, ed. Derenbourg (1889, 455).

[131] For this passage see §I.1.4.

[132] Allony (1973, 102, text line 28).

to be referring to the retroflection of the tongue tip (Khan 1995, 79). Retroflection of the tongue tip is a feature often associated with pharyngealized alveolar *r* in modern spoken Semitic languages.[133]

The references to the ‘heavy’ or ‘hard’ pronunciation of the secondary *resh* and its association with the term *dagesh* (e.g. Saadya *resh dagesh*), can be correlated with the fact that pharyngealized *r* was pronounced with greater muscular tension.

According to *Hidāyat al-Qāriʾ* and other medieval sources, this apico-alveolar pharyngealized *resh* occurred when it is preceded by the consonants דזצתטסלן or followed by לן and when either *resh* or one of these consonants has *shewa*.[134] This can be reformulated as the rule that alveolar *resh* occurs when one of the following conditions holds:

(i) *Resh* is in immediate contact with a preceding alveolar, e.g. בְּמִזְרֶה [bamizˈrˁɛː] ‘with a pitchfork’ (Jer. 15.7), מַצְרֵף [mɑsˁˈrˁeːef] ‘crucible’ (Prov. 17.3).

(ii) *Resh* is in the same syllable, or at least the same foot, as a preceding alveolar, e.g. דַּרְכּוֹ [dɑrˁˈkʰoː] ‘his way’ (Gen. 24.21), טַרְפֵּי [tˁɑrˁˈpʰeː] ‘the leaves’ (Ezek. 17.9). The condition applies also to a *resh* in word-final position that is in the same syllable or at least the same foot as an alveolar,

[133] E.g. in Neo-Aramaic dialects (Khan 2008, 32).

[134] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.9.4., §II.L.1.9.7.; Saadya, *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 79); Masoretic treatise attributed to Yehudah ha-Nazir (ed. Allony, 104, text lines 51-56).

although the *resh* is not marked with a *shewa* in such cases, e.g. שַׂר [sɑrˤ] 'commander of' (1 Sam. 18.13), לִמְטַ֣ר [limˈtˤɑːɑrˤ] 'by the rain' (Deut. 11.11).[135] A consonant with vocalic *shewa* is treated as belonging to the same foot as the following *resh* in the metrical structure of the phonetic realization of the word (§I.2.5.2.), e.g. צְרוּפָ֔ה [(sˤɑ.rˤuː.)(ˈfɔː)] 'refined' (2 Sam. 22.31), where feet are enclosed in round brackets and syllable boundaries are marked by dots. Likewise, as can be seen from the transcription לִמְטַ֣ר [limˈtˤɑːɑrˤ], a closed syllable containing a long vowel has an epenthetic vowel of the same quality following the long vowel. It will be argued, however, that it is nevertheless in the same prosodic foot, viz. [(lim.)(ˈtˤɑː.ɑrˤ)] (§I.2.4.). On the phonetic level, therefore, the *resh* is strictly not in the same syllable as the alveolar in forms such as צְרוּפָ֔ה [sˤɑ.rˤuː.ˈfɔː] and לִמְטַ֣ר [lim.ˈtˤɑː.ɑrˤ]. The conditioning factor for the emphatic allophone of the *resh* is that it occurs in the same foot as a preceding alveolar.

(iii) *Resh* is in immediate contact with or in the same syllable, or at least in the same foot, as a following ל or ן, e.g. עַרְלֵי־לֵ֑ב [ʕɑrˤleː-leːev] 'uncircumcised in heart' (Jer. 9.25), גָּרְנִ֑י [gɔrˤniː] 'my threshing-floor' (Isa. 21.10), רַנְּנ֣וּ [rˤɑnnaˈnuː] 'rejoice!' (Psa. 33.1), רְנָנָ֣ה [rˤɑnɔːˈnɔː] 'joyful cry' (Job 3.7).

Elsewhere *resh* had an advanced uvular realization, e.g. רֶ֣כֶב [ˈʀ̟ɛːxɛv] 'chariotry' (Exod. 14.9), מַרְאֶ֣ה [maʀ̟ˈʔɛː] 'appearance'

[135] These last two examples are cited by Saadya, *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 79).

(Gen. 12.11), שָׁמַ֣ר [ʃɔːˈmaːaʀ̟] 'he kept' (Gen. 37.11), אֶרְד֣וֹף [ʔɛʀ̟ˈdoːof] (Psa. 18.38).

As can be seen in (ii) above, Saadya cites the example שַׂר [sɑrˤ] with *sin*. The letter *sin* (שׂ), therefore, also conditioned the occurrence of the pharyngealized *resh* in the appropriate contexts, although it is not explicitly mentioned in the list of conditioning consonants in the medieval sources, which includes only דזצתטסלן. The letters *sin* and *samekh* had the same realization [s]. The written letter *sin* was considered to have *samekh* as its *qere* (§I.0.8.).

Pharyngealized *resh* is not unknown in modern reading traditions, e.g. in the tradition of Morocco (with the exception of Tetouan) *resh* may be realized as an emphatic alveolar trill [rˤ], generally in the environment of *a* or *u* or an emphatic consonant

ʔúrˤ (Akun 2010, 49 | L [BHS]: א֑וֹר /אוֹר Gen. 1.3 'light')

This pharyngealization, moreover, may spread to adjacent consonants, e.g.

isˤrˤɑˈil (Akun 2010, 72 | L [BHS]: יִשְׂרָאֵ֜ל Exod. 15.1 'Israel')

jɑrˤˈdˤu (Akun 2010, 72 | L [BHS]: יָרְד֥וּ Exod. 15.5 'they went down')

In Jewish Palestinian Aramaic sources from the pre-Masoretic period, an *a* or *i* vowel sometimes shifts to a rounded vowel represented by *vav* in the orthography. This occurs in particular in a syllable closed by a labial consonant or *resh*, e.g. גוברא (< **gavrā*), 'man', רומשא (< **ramšā*) 'evening', תורעא (< **tarʿā*) 'door', יורדנא (< **yardenā*) 'Jordan' (Dalman 1894, 65). A similar

vowel shift is attested in Christian Palestinian Aramaic, Samaritan Aramaic and also Palestinian Rabbinic Hebrew (Ben-Ḥayyim 1946, 194–96; Kutscher 1979, 496–97; Mishor 1998). Rounding of a vowel in the environment of labials is a natural development. The motivation for the rounding and backing in the environment of *resh* is not so clear, but could reflect a pharyngealized pronunciation of *resh*. Pharyngealized consonants involve the retraction of the tongue and consequent lip-rounding.[136] In Palestinian Aramaic and Rabbinic Hebrew, the *vav* before *resh* is not restricted to the environments that induced the pharyngealized *resh* in Tiberian Hebrew, but it may be interpreted as evidence that a pharyngealized *resh* existed in the spoken language of the Jews of Palestine in the pre-Islamic period.

In the passage from his commentary on the *Sefer Yeṣira* that is cited above, Saadya states that the Tiberians have a double *resh* in their reading of the Bible, whereas the Iraqis (i.e. Babylonians) have it in their speech but not in their reading of the Bible.

Saadya does not specify which type of Tiberian *resh* resembles the *resh* in the Babylonian biblical reading tradition. *Sefer Yeṣira* classifies *resh* among the consonants pronounced at the front of the mouth 'between the teeth and with a resting tongue'[137] According to Morag (1960, 233), this reflects the

[136] For labialization associated with pharyngealized consonants in modern spoken Arabic dialects see Bellem (2007) and for this feature in Neo-Aramaic see Khan (2016, vol. 1, 50).

[137] בין שינים ובלשון ישן 'between the teeth and with a resting tongue', בלשון שכובה ושטוחה 'with a resting and flat tongue' (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

pronunciation of the Babylonian Jews. This was no doubt similar to the pronunciation of *resh* in the modern reading tradition of the Jews of Baghdad, in which it is realized as an alveolar trill (Morag 1977, 6). It is significant to note that in the modern Arabic dialect of the Jews of Baghdad there are two reflexes of Classical Arabic *rāʾ*, viz. (i) a back velar or uvular fricative ([ɣ], [ʁ]) or (ii) an alveolar trill [r] (Blanc 1964, 20–25; Mansour 1974, vol. 1, 25-31, 34-35). This two-fold pronunciation in the Arabic vernacular may be the double *resh* of the speech of the Iraqis described by Saadya. So, the comparison by Saadya of the Tiberian *resh* with the Iraqi vernacular *resh* can be taken as evidence supporting the proposal to identify the two types of Tiberian *resh* as apical and advanced uvular.

Saadya does not refer to the speech of the Tiberians, but other sources indicate that the distinction between different types of *resh* in the Tiberian reading is also found in the local vernacular speech. The author of one extant Masoretic Treatise datable to the tenth century states that he undertook fieldwork in the streets of Tiberias to verify his analysis of the *resh* of the Tiberian reading, on the grounds that *resh* had the same pronunciation in the local speech of the (Jewish) inhabitants of Tiberias:

> ‘I spent a long time sitting in the squares of Tiberias and its streets listening to the speech of the common people, investigating the language and its principles, seeing whether anything that I had established was overturned or any of my opinions proved to be false, in what was uttered with regard to Hebrew and Aramaic, etc., that is the

> language of the Targum, for it resembles Hebrew … and it turned out to be correct and accurate.’[138]

The interpretation of this is not completely clear. The Aramaic mentioned by the author could have been vernacular Aramaic that was still spoken in Tiberias at the period. The Hebrew must have been the recitation of Hebrew liturgy or the occurrence of a ‘Hebrew component’ (Hebrew words and phrases) within vernacular speech. The reference to the two types of *resh* is found also in a Hebrew treatise in the corpus published by Baer and Strack,[139] in which, likewise, it is stated that this pronunciation existed in the conversational speech of the common people.

I.1.21. *Sin* שִׂין (שׂ)

Unvoiced alveolar sibilant [s]

This had the same pronunciation as *samekh* in the Tiberian tradition. It is not distinguished from *samekh* in *Hidāyat al-Qāriʾ*. When it is stated in this work that ‘The fourth place of articulation is the teeth, from which are heard four letters, namely זסצש (*zayin, samekh, ṣade* and *shin*),’[140] the letter ס is intended to refer to both *samekh* and *sin*. As discussed in the

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[138] וכנת אטיל ﻋלג̇לוס פי סוחאת טבריה ושוארעהא א[סת]מע כלאם אלסוקה ואלעאמה ואבחת̇ ען עללגה ואצול[הא] אנט̇ר הל ינכסר שי ממא אצלת או ינפסד שי ממא ט̇הר לי ופי מא נֻקט ב[ה מן] אלעבראני ואלסריאני ואנואעה אע̇ לגה אלתרגום וגירה פאנה מג̇אלנס ללעבראני … פכ̇רג̇ צחיח מחרר (Allony 1973, 98–100).

[139] Baer and Strack (1879, §7).

[140] Long version, edition in vol. 2 of this book, §II.L.1.3.8.

Introduction (§I.0.8.), the written letter *sin* was considered to have *samekh* as its *qere*.

In the Karaite transcriptions, the diacritical dot of Hebrew *sin* is sometimes written over the left side of Arabic *sīn* when it transcribes *samekh*, e.g.

حسيداخا (BL Or 2551 fol. 10r, 8 | L [BHS]: חֲסִידֶ֑יךָ Psa. 52.11 'your saints')

مستتير (BL Or 2551 fol. 13v, 7 | L [BHS]: מִסְתַּתֵּ֖ר Psa. 54.2 'he who hides')

كاحاسذ (BL Or 2539 MS A, fol. 65r, 3 | L [BHS]: כַּחֶ֫סֶד Gen. 21.23 'like the kindness')

As remarked in the Introduction (§I.0.8.), *samekh* and *sin* sometimes interchange in the same word or root in the fixed orthography of the Masoretic Text, e.g.

Ezra 4.5: וְסֹכְרִ֧ים 'and they hire' vs. 2 Chron. 24.12 שֹׂכְרִ֣ים

In the biblical manuscripts from Qumran, there are many cases of *sin* occurring in place of Masoretic *samekh* and vice versa, which is additional evidence that the equivalence in pronunciation existed already in the Second Temple Period, e.g.[141]

פשח (4Q136 f1.8 | L [BHS]: פֶּ֫סַח Exod. 12.48 'Passover')

[141] Data supplied by Aaron Hornkohl.

ושרתם (XHev/Se5 f1.14 | L [BHS]: וְסַרְתֶּ֗ם Deut. 11.16 'and you [mpl] will turn away')

שעפי הסלעים (1QIsa[a] 47.4 | L [BHS]: סְעִפֵ֖י הַסְּלָעִֽים Isa. 57.5 'the clefts of the rocks')

ישד ארץ (4Q93 1.11 | L [BHS]: יָֽסַד־אֶ֭רֶץ Psa. 104.5 'he established the earth')

סדהו (4Q134 f1.26 | L [BHS]: שָׂדֵ֜הוּ Deut. 5.21 'his field')

ולחסוף (1QIsa[a] 24.23 | L [BHS]: וְלַחְשֹׂ֥ף Isa. 30.14 'and to scoop')

סאי (1QIsa[a] 41.16 | L [BHS]: שְׂאִֽי Isa. 49.18 'lift up [fs]!')

Ibn Janāḥ (Spain, eleventh century) states that the *dagesh* in the *sin* of עִשְּׂבֹ֥ות 'herbage' (Prov. 27.25) has the purpose of ensuring that it is not interchanged with *zayin*.[142] This suggests that *sin* in contact with voiced consonants was susceptible of being read as voiced.

In some medieval Muslim sources, *sin* is represented by *ṣād* [sˤ] in the name עֵשָׂו: عيصو (Schreiner 1886, 254). This apparently reflects its pharyngealization after the pharyngeal *ʿayin*.

The pharyngealization of *sin* in the environment of emphatic consonants is attested in some modern reading traditions, e.g.

Yemen

[wajjɪsˤtˤɞːm]) (Morag 1963, 37-38 | L [BHS]: וַיִּשְׂטֹ֤ם Gen. 27.41 'and [Esau] hated')

[142] *Kitāb al-Lumaʿ* (ed. Derenbourg 1886, 240), Schreiner (1886, 241).

I.1.22. *SHIN* שִׁין (שׁ)

Unvoiced palato-alveolar fricative [ʃ]

According to the medieval sources, its place of articulation was the same as that of the sibilants *zayin* and *samekh,* namely the teeth.[143] As was pointed out above in the section on *zayin* (§I.1.7.)*,* this did not necessarily imply that the teeth were one of the primary articulators. It is described by Ibn Janāḥ as a 'spreading letter',[144] which no doubt referred to its palatalized articulation. In the Karaite transcriptions, it is represented by Arabic *shīn,* which, according to the Arabic grammarians, was a palatal fricative [ç], a pre-palatal fricative [ç⁺] or an alveolo-palatal [ɕ].[145] Tiberian *shin* was not primarily palatal, since it was not included by *Hidāyat al-Qāriʾ* among the letters that are pronounced with the middle of the tongue.

I.1.23. *TAV* תָּו (ת)

Tav with *dagesh* (תּ): unvoiced aspirated alveolar stop [t^h]

Tav without *dagesh* (ת): unvoiced alveolar fricative [θ]

A *tav* without *dagesh* is frequently, but not regularly, marked by the *rafe* sign in the model Standard Tiberian codices.

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[143] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.1.3.8.; ed. Eldar (1980, fol. 10b, line 77). *Sefer Yeṣira* (ed. Gruenwald 1971, 147; ed. Hayman 2004, 92–98).

[144] חרף אלתפשי (*Kitāb al-Lumaʿ*, ed. Derenbourg, 27).

[145] Roman (1983, 202, 218, 248).

In some manuscripts of *Hidāyat al-Qāriʾ,* the name of this letter is spelt תיו or תאו.[146]

According to *Hidāyat al-Qāriʾ*, *tav* was articulated with 'the end of the tongue and the flesh of the teeth', i.e. the gums or alveolar ridge.[147] Likewise, Saadya describes the place of articulation of *tav* as being adjacent to the inside of the upper teeth.[148] When the letter had *dagesh*, the tongue was pressed firmly against the gums. When it was without *dagesh*, the tongue was pressed lightly against the gums. Both forms of the letter were articulated in the same place according to the medieval sources. It appears to have been pronounced with the tip of the tongue rather than the blade (see the description of *dalet* §I.1.4.).

Hidāyat al-Qāriʾ describes the stop [t^h] as primary (*ʾaṣl*) and the fricative [θ] as secondary (*farʿ*).[149]

We know from Greek transcriptions that in the first half of the first millennium C.E. plosive *tav* was pronounced with aspiration.[150] In Greek transcriptions from the pre-Masoretic period, plosive *tav* is represented by Greek *theta*, which was an aspirated stop [t^h]. In Latin transcriptions from the pre-Masoretic

[146] E.g. short version, edition in vol. 2 of this book, §II.S.3.0., §5.1.

[147] Long version, edition in vol. 2 of this book, §II.L.1.3.7.; ed. Eldar (1980, fol. 10b, lines 67–69).

[148] *Commentary on Sefer Yeṣira* (ed. Lambert 1891, 75).

[149] Long version, edition in vol. 2 of this book, §II.L.1.2.

[150] Kutscher (1965, 24–35).

period, it is represented by the Latin digraph *th*, which likewise represented an aspirated stop [t^h]. Examples:[151]

Septuagint (third century B.C.E.)

> *Θάρα* (Göttingen Septuagint | L [BHS]: תָּֽרַח Gen. 11.24 ‘Terah’)
>
> *Νεφθαλί* (Göttingen Septuagint | L [BHS]: נַפְתָּלִֽי Gen. 30.8 ‘Naphtali’)

Hexapla of Origen (c. 185–254 C.E.)

> *θαμιμ* (Ambrosiana Palimpsest | L [BHS]: תָּמִ֫ים Psa. 18.26 ‘blameless’)
>
> *αμαρθι* (Ambrosiana Palimpsest | L [BHS]: אָמַ֣רְתִּי Psa. 30.7 ‘I said’)

Jerome (346-420 C.E.)

> tharsis (Jerome, Commentary on Ezekiel, ed. Gorie, III.10.763 | L [BHS]: תַּרְשִֽׁישׁ Ezek. 10.9 ‘Tarshish’)
>
> machthab (Jerome, Commentary on Isaiah, ed. Gryson, XI.14.6 | L [BHS]: מִכְתָּ֣ב Isa. 38.9 ‘writing’)

This aspirated realization of plosive *tav* continued in the Tiberian reading tradition. In the Karaite transcriptions, plosive *tav* with *dagesh* is represented by Arabic *tāʾ*, which was aspirated according to the medieval Arabic grammarians.[152]

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[151] Data supplied by Ben Kantor.

[152] Roman (1983, 55).

I.1.24. Consonant Phonemes

The inventory of consonant phonemes in the Tiberian reading tradition can be reconstructed as follows:[153]

Phoneme	Allophones	Orthography	Comments
/ʔ/	[ʔ]	א	
/b/	[b]	בּ	
/v/	[v]	ב	See §I.1.25. below
/g/	[g]	גּ	
/ʁ/	[ʁ]	ג	See §I.1.25. below
/d/	[d]	דּ	
/ð/	[ð]	ד	See §I.1.25. below
/h/	[h]	ה	
/v/	[v], [w]	ו	There are variations in the realization of the allophones across different sub-traditions of reading (§I.1.6.).
/z/	[z]	ז	
/ħ/	[ħ]	ח	
/tˤ/	[tˤ]	ט	
/j/	[j], [ɟ]	י	The stop allophone [ɟ] occurs only when the consonant is geminated.

[153] The inventory of consonant phonemes presented here corresponds to that proposed by Schramm (1964, 63) on the basis of the graphemes of Tiberian Hebrew, although he did not have access to the original phonetic realizations.

/kʰ/	[kʰ]	כּ, ךּ	
/χ/	[χ]	כ, ך	See §I.1.25. below
/l/	[l]	ל	
/m/	[m]	מ, ם	
/n/	[n]	נ, ן	
/s/	[s]	ס, שׂ	These were equivalent in the oral reading tradition. The distinction in orthography is an archaism (§I.0.8.).
/ʕ/	[ʕ]	ע	
/pʰ/	[pʰ]	פּ	
/pˤ/	[pˤ]	פּ	This is attested only in אַפַּדְנוֹ ‘his palace’ (Dan. 11.45), where its occurrence is not conditioned by the phonetic environment, so it should be identified as a phoneme (§I.1.17.).
/f/	[f]	פ	See §I.1.25. below
/sˤ/	[sˤ], [zˤ]	צ	For the voiced variant see §I.1.7.
/q̟/	[q̟]	ק	
/r/	[ʀ̟], [rˤ]	ר	The two variant realizations are conditioned by the phonetic environment and so should be identified as allophones (§I.1.20.).

/ʃ/	[ʃ]	שׁ	
/t^{h}/	[t^{h}]	תּ	
/θ/	[θ]	ת	See §I.1.25. below

I.1.25. Distribution of the Variants of בגדכפת

In general, the fricative variants of the בגדכפת letters (i.e. the forms written without a *dagesh* sign: [v], [ʁ], [ð], [χ], [f] and [θ], respectively) occur after a vowel when the letter is not geminated, e.g. רָ֣ב [ˈʀ̟aːav] 'much' (Gen. 24.25), יִשְׁכְּב֗וּ [jiʃk^{h}aˈvuː] 'they will lie' (Isa. 43.17). In principle, therefore, the stop and fricative variants appear to be allophones conditioned by the environment. In many cases, however, the preceding vowel had been elided in some previous stage of the language, but the consonant nevertheless remained a fricative, e.g.

בְּכָתְב֞וֹ [baχɔθˈvoː] 'when he had written' (Jer. 45.1) < **bakutubō*

מַלְכֵ֥י [malˈχeː] 'kings of' (Gen. 17.16) < **malakē*

In a few such cases, a plosive and a fricative are in free variation, e.g.

רִשְׁפֵי [ʀ̟iʃˈfeː] (Psa. 76.4), רִשְׁפֶּ֫י [ʀ̟iʃˈp^{h}eː] (Cant. 8.6) 'flames'

The distribution of the plosive and fricative allophones, therefore, is not completely predictable from the phonetic context in Tiberian Hebrew. Consequently, the plosive and fricative variants of the letters should be distinguished in a synchronic phonological representation, e.g.

מַלְכֵ֣י /malχē/ [malˈχeː] ‘kings of’ (Gen. 17.16)

בִּנְפֹ֖ל /binfol/ [binˈfoːol] ‘at the falling of’ (Isa. 30.25)

In the corpus of the Hebrew Bible, however, there is no certain minimal pair arising from the phonemicization of the variants of the בגדכפת consonants, though such oppositions could hypothetically occur in Tiberian Hebrew. Such minimal pairs are found in Aramaic, where the בגדכפת consonants were likewise phonemicized (Khan 2005, 84–87).

I.2. VOWELS AND SYLLABLE STRUCTURE

I.2.1. Basic Vowel Signs

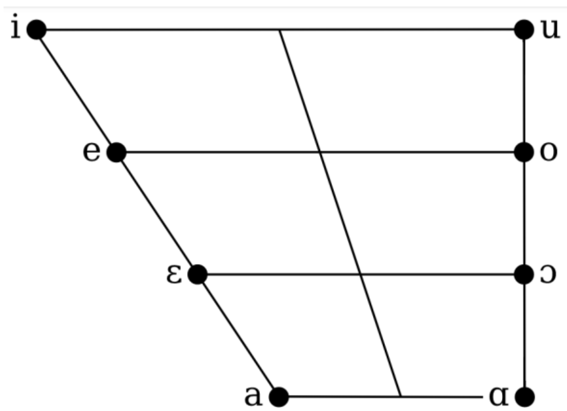
I.2.1.1. The Qualities of the Vowels

The basic vowel signs in the standard Tiberian vocalization system indicated distinctions in vowel quality rather than distinctions in length. The qualities of the various vowels can be reconstructed as follows from the sources that are discussed below (the signs are added to the letter א):

Pataḥ	פַּתַח (אַ):	Open, unrounded front [a] or back [ɑ]
Qameṣ	קָמֵץ (אָ):	Back, open-mid rounded [ɔ]
Segol	סֶגוֹל (אֶ):	Front, open-mid unrounded [ɛ]
Ṣere	צֵרֵי (אֵ):	Front, close-mid unrounded [e]
Ḥireq	חִירֶק (אִ):	Front, close, unrounded [i]
Ḥolem	חוֹלֶם (אֹ):	Back, close-mid rounded [o]
Shureq *Qibbuṣ*	שׁוּרֶק (אוּ) קִבּוּץ (אֻ):	Back, close, rounded [u]

These qualities correspond to the eight primary cardinal vowels, which are represented diagrammatically according to their position of articulation below:

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I.2.1.2. The Terms *Pataḥ* and *Qameṣ*

The terms *pataḥ* and *qameṣ* are found in the early Masoretic and grammatical sources. They are in origin Aramaic active participles and are vocalized as such in some manuscripts, viz. פָּתַח and קָמֵץ.[1] In some Masoretic treatises forms with a final *he* are used, viz. פתחה and קמצה. The suffix may be the Aramaic definite article or the feminine ending.[2] In Arabic sources such as *Hidāyat al-Qāriʾ* equivalent Arabic feminine participles are used, viz. פאתחה *fātiḥa* and קאמצה *qāmiṣa*.[3] The terms referred to the distinct lip positions of the two vowels, *pataḥ* 'opening', *qameṣ* 'closing, contracting',[4] indicating that the *pataḥ* was pronounced

[1] For examples in early Karaite grammatical texts (Khan 2000a, 28).

[2] For the sources see Steiner (2009).

[3] Eldar (1994, 123–24)

[4] In Jewish Palestinian Aramaic the verb קמץ is used in the sense of 'closing (eye, mouth), e.g. די קמיץ חדא ופתח חדא 'because (the sleeping deer) opens one (eye) and closes the other' (Palestinian Talmud, *Shabbat* 14b) (Sokoloff 1992, 496).

with open, spread lips whereas the *qameṣ* was pronounced with a smaller aperture of the mouth on account of some degree of lip-rounding. The fact that the terms are Aramaic in origin indicates that they must have been created in the early Masoretic period, before the tenth century, when Aramaic was in productive use by the Masoretes. By the tenth century, Masoretic treatises were written in Hebrew or Arabic (§I.0.13.1.). The names of these vowels came to receive a variety of different vocalizations in later sources. The practice developed of vocalizing the first syllable of the names of vowels symbolically with the vowel it designated, so *pataḥ* came to be vocalized as פַּתַח. This type of vocalization, which according to Dotan was used from the eleventh century onwards,[5] is the vocalization used, for example, by Elias Levita (1469-1549). Subsequently, the vowel of the second syllable of the names of vowels was also given a similar symbolic vocalization. These often reflect pronunciation traditions that did not distinguish between the pronunciation of the two vowels and one finds vocalizations such as קָמַץ, פַּתָח and פַּתָּח.[6]

I.2.1.3. More on the Quality of *Pataḥ* and *Qameṣ*

Saadya and *Hidāyat al-Qāriʾ* give details of the articulatory distinction between the vowels within the oral cavity. Their descriptions are based on a theory of the production of vowels, which can be traced to the Muslim physician Ibn Sīnā (980–1037 C.E.), that involves both the position of buccal organs and the

[5] Dotan (2007, 634).

[6] For details see Steiner (2009).

direction of the dynamic flow of air.[7] The *Hidāya* states that the place of articulation of *pataḥ* is the 'surface of the tongue at the bottom (of the mouth)'.[8] Saadya similarly states that 'its strength (i.e. dynamic realization by airflow) goes over the surface of the tongue moving downwards.'[9] With regard to *qameṣ* the *Hidāya* indicates that its place of articulation is 'slightly above the root of the tongue, that is the (back) third of the tongue, and its movement is towards the (place) above the palate.'[10] Saadya indicates that the place of articulation of *qameṣ* is next to that of *ḥolem*:

> 'If one wants to move the vowel from this place (of *ḥolem*) and then articulate it, the strength (i.e. realization) of *qameṣ* comes about, and its movement (i.e. direction of airflow) is towards the place above the palate in particular.'[11]

According to the theory of the realization of vowels by dynamic airflow, the realization of *pataḥ* took place through the free flow of air across the surface of the tongue in a low position,

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[7] For details see Eldar (1983).

[8] סטח אללסאן מן אספל, long version, edition in vol. 2 of this book, §II.L.2.15.3.; Eldar (1994, 130).

[9] קותהא סאירה עלי סטח אללסאן מנחדרה אלי אלספל (Dotan 1997, 445).

[10] פוק אצל אללסאן קלילא והו ת̇לת̇ אללסאן והרכתהא אלי פוק אלחנך, long version, edition in vol. 2 of this book, §II.L.2.15.2.; Eldar (1994, 130).

[11] ואן שא אן יתגאוז בהא הדא אלמוצ̇ע תם יפצלהא ט̇הרת קוה עלקמץ וכאנת חרכתה אלי אעלי אלחנך כאצה (Dotan 1997, 445).

whereas in the realization of *qameṣ* there was some obstruction that directed the air upwards towards the palate.[12]

From the vowel names and the aforementioned descriptions of articulation, it can be determined that Tiberian *pataḥ* was an open, unrounded vowel in the region of [a] or [ɑ] whereas *qameṣ* was a back half-open rounded vowel below *ḥolem* in the region of [ɔ].

As indicated, it is likely that *pataḥ* had both an open front quality [a] and an open back quality [ɑ]. The back quality [ɑ] would have been induced in particular by the environment of consonants involving retraction of the tongue root, especially pharyngeals and pharyngealized consonants. Indirect evidence for this is found in the modern reading traditions of Middle Eastern communities, in which the front open vowels have back open variants in particular when adjacent to pharyngeal or pharyngealized consonants. This is the case in the Sefardi type traditions, in which *pataḥ* and *qameṣ* have a default quality of [a], e.g.

Baghdad

[a] quality:

ˈjaːʕaˌbod (Morag 1977, 53 | L [BHS]: יַֽעֲבֹ֑ד Exod. 21.2 'he will work')

šaˈnaː (Morag 1977, 56 | L [BHS]: שָׁנָ֑ה Gen. 47.28 'year')

[12] For this interpretation see Eldar (1983, 47).

[ɑ] quality:

wajjiˈṭɑbˑ (Morag 1977, 54 | L [BHS]: וַיִּיטַ֣ב Esther 1.21 ‘and [the matter] was good’)

ˈbɑːʕaˌra (Morag 1977, 56 | L [BHS]: בָּ֥עֲרָה Esther 1.12 ‘[his anger] burned’)

Aleppo

[a] quality:

ˌjaʕaˈqọːb (Katz 1981, 45 | L [BHS]: יַעֲקֹ֛ב Gen. 47.28 ‘Jacob’)

ʃaˈnim (Katz 1981, 45 | L [BHS]: שָׁנִ֔ים Gen. 47.28 ‘years)

[ɑ] quality:

lezɑrʕɑˈxa (Katz 1981, 46 | L [BHS]: לְזַרְעֲךָ֛ Gen. 48.4 ‘to your (ms) seed’)

Jerba

[a] quality:

ˌwenaˈfale (Katz 1977, 82 | L [BHS]: וְנָפַ֖ל Exod. 21.18 ‘and he falls’)

joˈmar (Katz 1977, 83 | L [BHS]: יֹאמַר֙ Exod. 21.5 ‘[the slave] will say’)

hiʃˈʃa (Katz 1977, 83 | L [BHS]: אִשָּׁה֙ Exod. 21.3 ‘woman’)

[ɑ] quality:

ˈjɪqqɑħ (Katz 1977, 84 | L [BHS]: יִֽקַּֽח־ Exod. 21.10 ‘he will take’)

weˈjɑsˤiˈha (Katz 1977, 75 | L [BHS]: וְיָצְאָ֥ה Exod. 21.3 ‘[his wife] will leave’)

In the Karaite transcriptions long *pataḥ* and *qameṣ* are generally represented by *mater lectionis ʾalif*, e.g.

ويجامال [vaɟɟiggɔːˈmaːal] (BL Or 2539 MS A, fol. 63r, 2 | L [BHS]: וַיִּגָּמַ֑ל Gen. 21.8 'and he was weaned')

The qualities of *pataḥ* [a] and [ɑ] would have been allophones of Arabic long /ā/, the latter in pharyngealized environments (known as *tafkhīm*). The choice of *ʾalif* in the Karaite transcriptions for the rounded *qameṣ* [ɔ] was due to its proximity to the normal range of allophones of Arabic */ā/*.

The back rounded open-mid quality of *qameṣ* and its distinctness from *pataḥ* is reflected by some of the medieval Karaite transcriptions. The vowel is, for example, sporadically represented by Arabic *wāw*, e.g.

واوساف [vɔʔɔːˈsaːaf] (Genizah MS 12, Khan 1990a, 151 | L [BHS]: וְאָסַ֣ף (Num. 19.9 'and he will gather up')

ورو‍حا[ص] [vaʀ̟ɔːˈħɑːɑsˤ] (Genizah MS 12, Khan 1990a, 151 | L [BHS]: וְרָחַ֥ץ Num. 19.8 'and he will bathe')

هواحاث [hɔːʔaːˈħaːθ] (II Firkovitch Arab.-Evr. 1, Harviainen 1994, 36 | L [BHS]: הָֽאַחַ֗ת Gen. 4.19 'the one')

يسروال [jisrˤɔːˈʔeːel] (II Firkovitch Arab.-Evr. 1, Harviainen 1994, 36 | L [BHS]: יִשְׂרָאֵ֔ל 'Israel')

In the British Library manuscript Or 2554, the qualitative distinction between the open vowel *pataḥ* and the open-mid back round vowel *qameṣ* is reflected by the fact that syllables with

pataḥ are marked by the Arabic vowel *fatḥa*, but *fatḥa* is not marked on syllables with *qameṣ*, e.g.

> ناْثَاْن [nɔːˈθaːan] (BL Or 2554 fol. 38v, 1 | L [BHS]: נָתַ֣ן Cant. 1.12 'it gave')

> يَلاْذَاْثْخا [jalɔːˈðaːaθχɔː] (BL Or 2554 fol. 87r, 9 | L [BHS]: יְלָדַ֥תְךָ Cant. 8.5 'she gave birth to you')

I.2.1.4. The Quality of *Qameṣ* in Other Traditions

The medieval Babylonian pronunciation tradition also had a qualitative distinction between open *pataḥ* and rounded *qameṣ*. This is reflected by Babylonian terminology for the vowels, viz. *miftaḥ pumma* (מיפתח פומא) 'opening of the mouth', which corresponds to the Tiberian term *pataḥ*, and *miqpaṣ pumma* (מיקפץ פומא) 'contraction (i.e., rounding) of the mouth', which corresponds to the Tiberian term *qameṣ*. The roundedness of Babylonian *qameṣ* and its proximity in the vowel space to *ḥolem* is reflected also by the representation of the vowel with *wāw* in medieval Arabic transcriptions written by Muslims in the eastern region of the Islamic world where Babylonian Hebrew pronunciation was used, e.g. al-Bīrūnī, *Chronology of Nations* (Khan 2013d): هتوميد (הַתָּמִיד 'the daily offering'), اوب (אָב 'Av'), حمو (חַמָּה 'sun'), بثولو (בְּתוּלָה 'Virgo'). In Hebrew words in incantation bowls from Babylonian datable to the pre-Islamic period of the first millennium C.E. there are some occurrences of *vav* that corresponds to *qameṣ*, e.g. בורוך 'blessed' (Tiberian בָּרוּךְ), קודוש

'holy' (Tiberian קָדוֹשׁ) (Juusola 1999, 54–68; Mishor 2007, 219; Molin 2020).

The roundedness of *qameṣ* and its proximity in the vowel space to *ḥolem* is reflected by numerous occurrences of *vav* in biblical texts from Qumran where the Tiberian tradition has *qameṣ*. Several of these are in the environment of labial consonants, which could have conditioned the rounding of the vowel, e.g.[13]

חנום (11Q5 13.13 | L [BHS]: חִנָּ֑ם Psa. 119.161 'without cause')

ו]אבירום (4Q27 f6–10.12 | L [BHS]: וַאֲבִירָ֗ם Num. 16.1 'and Abiram')

מיום (4Q57 f9ii + 11 + 12i + 52.40 | L [BHS]: מִיָּ֑ם Isa. 24.14 'from the sea')

In many cases, however, it is likely that the *vav* reflects a different morphological form or exegesis from that of the Tiberian tradition (Kutscher 1979, 247, 473–74), e.g.

כבושים (1QIsa[a] 5.3 | L [BHS]: כְבָשִׂ֖ים Isa. 5.17 'sheep')

בוניך (1QIsa[a] 41.16 | L [BHS]: בָּנָ֑יִךְ Isa. 49.17 'your [fs] children')

קדמותה (1QIsa[a] 18.11 | L [BHS]: קַדְמָתָ֑הּ Isa. 23.7 'its former time')

חוש (4Q59 f4–10.2 | L [BHS]: חָ֑שׁ Isa. 8.3 'Hash')

כצור (1QIsa[a] 5.17 | L [BHS]: כַּצַּ֣ר Isa. 5.28 'like flint')

[13] Data supplied by Aaron Hornkohl.

חוזה (1QIsa[a] 11.12 | L [BHS]: חָזָ֫ה Isa. 13.1 '[Isaiah] saw')

חורו (1QIsa[a] 19.3 | L [BHS]: חָר֫וּ Isa. 24.6 '[and inhabitants of the land] are scorched')

שוכן (1QIsa[a] 27.29 | L [BHS]: שָׁכֵ֥ן Isa. 33.24 'inhabitant')

להוכין (1QIsa[a] 33.19 | L [BHS]: לְהָכִ֥ין Isa. 40.20 'to prepare')

In the ancient Greek transcriptions of Hebrew, long *qameṣ* is generally represented by *α*. There are a few sporadic cases where *ω* or *ο* correspond to Tiberian long *qameṣ*. Most of these, however, are likely to reflect different morphological patterns or have some other explanation rather than reflecting a back rounded quality, e.g.[14]

Septuagint (third century B.C.E.)

Ἰωυὰν (Göttingen Septuagint | L [BHS]: וְיָוָ֑ן Gen. 10.2 'Javan')

Ἰωβέλ (Göttingen Septuagint | L [BHS]: יָבָ֑ל Gen. 4.20 'Jabal')

Γαυλὼν (Göttingen Septuagint | L [BHS]: גּוֹלָ֖ן Deut. 4.43 'Golan')

The exceptional case Ιωυαν may be explained as an imitation of the Greek word with a similar meaning, ἴων. The examples Ιωβελ and Γαυλων probably reflect different patterns (Knobloch 1995, 181, 314, 394-395).

[14] Data supplied by Ben Kantor.

Hexapla of Origen (c. 185–254 C.E.)

> *ουεσοκημ* (Ambrosiana Palimpsest | L [BHS] וָֽאֶשְׁחָקֵ֥ם Psa. 18.43 ‘and I crush them’)
>
> *εμωσημ* (Ambrosiana Palimpsest | L [BHS]: אֶ֭מְחָצֵם Psa. 18.39 ‘I strike them’)
>
> *σφωθαϊ* (Ambrosiana Palimpsest | L [BHS]: שְׂפָתַ֗י Psa. 89.35 ‘my lips’)
>
> *ολδ* (Ambrosiana Palimpsest | L [BHS]: חָֽלֶד Psa. 49.2 ‘(the) world’)

The first two forms most likely reflect an /o/ theme vowel (rather than an /a/ theme vowel) in these verbs. The final two forms are likely to reflect variant morphological patterns.[15]

In the writings of Jerome (346-420 C.E.), there are a few cases where the vowel *o* occurs corresponding to Tiberian long *qameṣ*, e.g.

> zochor (Jerome, *Commentary on Isaiah*, ed. Gryson, VIII.23.56 | L [BHS]: זָכָר Isa. 26.14 ‘male’)
>
> chauonim (Jerome, *Commentary on Jeremiah*, ed. Reiter, 100.21–22 | L [BHS]: כַּוָּנִ֛ים Jer. 7.18 ‘cakes’)
>
> gob (Jerome, *Commentary on Ezekiel*, ed. Glorie, V.16.85 | L [BHS]: גָּ֑ב Ezek. 16.24 ‘pit’)
>
> bosor (Jerome, *Commentary on Isaiah*, ed. Gryson, X.14.82–84 | L [BHS]: בָּשָׂר? Isa. 34.6 ‘flesh’)

[15] Yuditsky compares *σφωθαϊ* to forms like בשפאותיכה and שפות in the Dead Sea Scrolls (Yuditsky 2017).

In most cases, however, Jerome represents the vowel corresponding to Tiberian long *qameṣ* by *a*, e.g.

enach (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Amos, III.7, p. 318, line 178 | L [BHS]: אֲנָ֑ךְ Amos 7.7 'plumbline')

hissa (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 45.1 | L [BHS]: אִשָּׁ֔ה Gen. 2.23 'woman')

ethan (Jerome, *Commentary on Jeremiah*, ed. Reiter, 72.14 | L [BHS]: אֵיתָ֣ן Jer. 5.15 'enduring')

aiala (Jerome, *Hebraicae Quaestiones in Libro Geneseos*, ed. de Lagarde et al., 70.20 | L [BHS]: אַיָּלָ֖ה Gen. 49.21 'doe')

emsa (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Zechariah, III.12, p. 863, line 132 | L [BHS]: אַמְצָ֥ה Zech. 12.5 'strength')

There are also some cases where the vowel corresponding to long *qameṣ* is *e*, e.g.

besor (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Zechariah, III.11, p. 849, line 25 | L [BHS]: הַבָּצוּר [lege הַבָּצִ֥יר] Zech. 11.2 'thick (ms)')

ciceion (Jerome, *Commentary on the Minor Prophets*, ed. Adriaen, Jonah, IV, p. 414, line 126 | L [BHS]: קִיקָיוֹן Jonah 4.6 'gourd/plant')

The cases of *o* corresponding to long *qameṣ* are, therefore, marginal and it is likely that they either reflect morphological patterns that are different from the Tiberian tradition or are conditioned by the consonantal environment (Harviainen 1977,

104–6). This applies, for example, to *zochor* and *bosor*, in which the *o* may have been conditioned by the *r*. In Palestinian Aramaic dialects and Rabbinic Hebrew *resh* often brings about such a vowel shift.[16]

The fact that long *qameṣ* had a back rounded quality in both the Tiberian and Babylonian traditions of pronunciation could, nevertheless, be proposed as an argument for this to be a shared feature that the two traditions have retained from a proto-Masoretic tradition of reading in Second Temple Palestine.

The open-mid back rounded quality [ɔ] of *qameṣ*, distinct from the open quality of *pataḥ*, has been preserved in the modern traditions of pronunciation of most Yemenite communities, which have their roots in the Babylonian tradition, e.g.

> mɪðbɔːrɔː (Morag 1963, 100 | L [BHS]: מִדְבָּ֣רָה Isa. 16.1 'in the desert')

I.2.1.5. *Segol* and *Ṣere*

In the early Tiberian Masoretic sources the terms *pataḥ* and *qameṣ* were used not only for the vowels represented by the signs *pataḥ* and *qameṣ* in the Tiberian vocalization, but also for the vowels *segol* and *ṣere* respectively. This early terminology appears to have developed before the creation of the vowel signs and indicated broad differences in lip-position of the vowels, as a guide to instruct readers how to distinguish between the various

[16] See §I.1.20 and Ben-Ḥayyim (1946, 194–96), Kutscher (1979, 496–97) and Mishor (1998).

vowel qualities.[17] The vowels *pataḥ* and *segol* were pronounced with spread, open lips, whereas there was some degree of closure of the lips in the pronunciation of *qameṣ* and *ṣere*. In a later version of this terminology, *segol* was referred to as *pataḥ qaṭan* 'small *pataḥ*' and *ṣere* as *qameṣ qaṭan* 'small *qameṣ*' with Hebrew adjectives qualifying the originally Aramaic term.[18]

The term *segol* comes from Aramaic סְגוֹל 'cluster of grapes', referring to the graphic appearance of the vowel sign rather than its phonetic production. Its vocalization with *shewa* under the *samekh* is attested in some early Masoretic treatises.[19] In *Hidāyat al-Qāriʾ* it has the form סגולה with a feminine ending.

The term *ṣere* is from the Aramaic verb צְרָא 'to split'. Since these terms are Aramaic, they are likely to have been created in the early Masoretic period and they indeed appear in early sources, such as the grammar book of Saadya.[20] It is not clear

[17] Bacher (1974, 15), Steiner (2005b, 374, 377–78), Posegay (2020).

[18] Baer and Strack (1879, §10), Dotan (2007, 634). The attribute *qaṭan* 'small' reflects the concept that the [ɛ] and [e] qualities were in some way more attenuated and more closed than the [a] and [ɔ] qualities respectively. This theory of vowels can be traced back to Syriac grammatical sources where the Syriac term *qaṭṭīn* 'narrow' is used to describe the higher front vowels (Posegay 2020). An Arabic version of this terminology is found in the Masoretic treatise *Kitāb al-Muṣawwitāt* (ed. Allony 1963, 140–42): *al-qamṣa al-kabīra* 'big *qameṣ*' (= *qameṣ*), *al-qamṣa al-ṣaghīra* 'small *qameṣ*' (= *ṣere*), *al-pataḥa al-kabīra* 'big *pataḥ*' (= *pataḥ*), *al-pataḥa al-ṣaghīra* 'small *pataḥ*' (= *segol*).

[19] E.g. Allony and Yeivin eds. (1985, 96).

[20] Dotan (1997, 113; 2007, 634).

what the original form of the name *ṣere* was. The author of *Hidāyat al-Qāriʾ* states that it means 'splitting' (*šāqq*) (through the lips),[21] suggesting that he read it as a participle צָרֵי. In some manuscripts of *Hidāyat al-Qāriʾ*, however, it is vocalized צֵרִי.[22] It is sometimes spelt, moreover, צירי both in *Hidāyat al-Qāriʾ* and in Saadya's work, with *mater lections yod* after the *ṣade*, and this is vocalized צֵירִי in some places.[23] In a Masoretic treatise published by Allony and Yeivin (1985, 96) it has the form צִרְיָא. It is likely that the term is related to the Jewish Babylonian Aramaic word צִירְיָא 'split, fissure.'[24] The name refers to the contraction of the lips to the extent that there is only a small aperture between them. In later sources the practice developed of vocalizing the first syllable with the vowels that the terms designated, i.e. סֶגוֹל, צֵרֵי and eventually also changing the quality of the second syllable in symbolic representation of the pronunciation of the vowel, resulting in forms such as סֶגֶל.[25]

In some Masoretic treatises and early grammatical texts, *segol* and *ṣere* are referred to by the phrases 'three dots' (שלוש נקודות, *thalāth nuqaṭ*) and 'two dots' (שתי נקודות, *nuqṭatāni*)

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[21] Short version, edition in vol. 2 of this book, §II.S.6.0.

[22] E.g. *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.17.

[23] E.g. *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.1.7.8.; short version, edition in vol. 2 of this book, §II.S.6.0.

[24] Eldar (1994, 124).

[25] Steiner (2009, 496). For other vocalizations of the vowels see Dotan (2007, 634).

respectively.[26] This is probably a relic from a period in which only the names *pataḥ* and *qameṣ* were in existence.

Hidāyat al-Qāriʾ describes the articulation of *segol* as being on 'the lower surface of the mouth,'[27] as is the case with *pataḥ*, but with 'contraction of the sides of the mouth'.[28] Saadya states that the *segol* is articulated in the same position as *pataḥ* when the speaker 'fills the lower sides of the mouth with it.'[29] This can be interpreted as referring to a smaller degree of opening of the mouth in the pronunciation of the vowel and a consequential protuberance of the cheeks. The smaller aperture is reflected also in the term 'small *pataḥ*' (פתח קטן) in some Masoretic sources.[30] The result is an open-mid unrounded [ɛ].

In the Karaite transcriptions, long *segol* is represented by *mater lectionis ʾalif*, e.g.

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[26] Cf. Dotan (2007, 634), e.g. Baer and Strack (1879, 34–36), the treatise on the *shewa* published by Levy (1936), the Masoretic fragments published by Mann (1969, 2:44), the *Diqduq* of Ibn Nūḥ (ed. Khan 2000, 28).

[27] עלי סטח אלפם אלספלאני, long version, edition in vol. 2 of this book, §II.L.2.15.4., Eldar (1994, 132).

[28] צֹם אגאב אלפם, short version, edition in vol. 2 of this book, §II.S.7.0, Eldar (1994, 131).

[29] ימלא מנהא גאנבי פמה אלספליין (Dotan 1997, 445).

[30] This interpretation of פתח קטן is in the Yemenite redaction of *Hidāyat al-Qāriʾ* known as the Arabic *Maḥberet ha-Tījān* (J. Derenbourg 1871, 16; Eldar 1994, 123).

بْرَزِّٕال [bɑʀ̟ˈzɛːɛl] (BL Or 2549 fol. 145r, 4 | L [BHS]: בַּרְזֶ֑ל Ezek. 4.3 'iron')

The quality [ɛ] was an allophone of Arabic long */ā/*, due to a process known by the medieval grammarians as *ʾimāla* 'inclining', i.e. inclining towards the vowel */ī/*.

Hidāyat al-Qāriʾ presents the articulation of the vowels *ṣere* and *ḥireq* as involving similar gestures. The place of articulation of *ṣere* is 'the teeth, without closure, because it breaks through them'[31] whereas the articulation of *ḥireq* involves 'the closure of the teeth tightly.'[32] Saadya likewise links the articulation of the two vowels:

> If the end of the tongue approaches the teeth but does not cover them, *ṣere* is produced, but if it covers them, *ḥireq* is produced.[33]

The Masoretic term 'small *qameṣ*' (קמץ קטן) for *ṣere* would refer to the lesser degree of closure of the lips than in the articulation of *qameṣ*.

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[31] מחל אלצרי והו אלאסנאן בלא אטבאק לאנה ישק בינהא שקא, long version, edition in vol. 2 of this book, §II.L.2.15.5.

[32] אטבאק אלאסנאן בקוה, long version, edition in vol. 2 of this book, §II.L.2.15.6.; Eldar (1994, 132).

[33] קרב טרף אללסאן אלי אסנאנה ולם יטבקהא (Dotan 1997, 445–47). A similar description of *ḥireq* is given by Dunash ibn Tamīm in his commentary on *Sefer Yeṣira*: יחתכוהו סוף הלשון בעזר מלתעות מן השניים 'They articulate it with the tip of the tongue with the help of (= in conjunction with) the incisors' (Grossberg 1902, 20–21; Eldar 1994, 133).

I.2.1.6. *Ḥireq*

The original vocalization of the name *ḥireq* is uncertain. The name is spelt חרק in the manuscript of Saadya's grammar book. The vocalization as a segolate form חֶרֶק is found in some manuscripts of *Hidāyat al-Qāriʾ* and medieval sources,[34] or חֵרֶק.[35] In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form חרקא. The form חִירֶק reflects the later development of vocalizing the first syllable with the vowel the name designates. In Jewish Palestinian Aramaic, the verbal root *ḥrq* in the *peʿal* and *paʿel* has the meaning of 'to gnash (one's teeth)', which is likely to refer to the tight closure of the teeth in the articulation of the vowel referred to in the *Hidāya*.[36] The vowel is also referred to in some early sources as 'one dot' (נקודה אחת, *nuqṭa wāḥida*).[37] Abraham ibn Ezra (1089–c. 1167) used the Hebrew term שבר 'breaking' to refer to this vowel (Lambert 1889, 124–25).

In the Karaite transcriptions, both long *ṣere* and *ḥireq* are normally represented by Arabic *mater lectionis yāʾ*, e.g.

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[34] E.g. *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.1.7.8. For other sources see Ben Yehuda (1980, vol. 4, 1783), Dotan (2007, 634).

[35] E.g. *Hidāyat al-Qāriʾ*, short version, edition in vol. 2 of this book, §II.S.6.0, MS S18, fol. 7r. MS S14, fol. 3r.

[36] Haupt (1901, 15) proposes that the name is related etymologically to Arabic *kharq* 'rent, fissure' (cf. Rabbinic Hebrew חָרַק 'to cut a gap') referring to the narrow opening of the lips.

[37] Dotan (2007, 634), Khan (2000, 28).

هِجّاميل [higgɔːˈmeːel] (BL Or 2539 MS A, fol. 63r, 3 | L [BHS]: הִגָּמֵ֥ל Gen. 21.8 ‘to be weaned’)

وِهوريذو [vohoːˈʀiːðuː] (BL Or 2539 MS A, fol. 105r, 7 | L [BHS]: וְהוֹרִ֨דוּ Deut. 21.4 ‘and they will bring down’)

The choice of *mater lectionis yāʾ* to represented the quality [eː] of *ṣere* was no doubt due to its being perceived as approximating more closely to the prototypical quality of Arabic */ī/* than to that of Arabic */ā/*.

I.2.1.7. *Ḥolem*, *Shureq* and *Qibbuṣ*

According to *Hidāyat al-Qāriʾ,* the meaning of name *ḥolem* חֹלֶם is ‘fullness’[38] since the vowel ‘fills the mouth’.[39] In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form חלמא. An alternative name for the vowel in some Masoretic sources is מְלֹא פּוּם ‘filling the mouth’. This is presented in opposition to קִבּוּץ פּוּם ‘contraction of the mouth’ (also called קמץ פומא) which refers in these sources to the */u/* vowel of *shureq* and *qibbuṣ*.[40] This terminology relates to the smaller rounding of the lips in the production of the *shureq* quality. A few medieval

[38] מלו, short version, edition in vol. 2 of this book, §II.S.6.0, Eldar (1994, 120). Cf. the Hebrew root חלם ‘to be healthy (i.e. whole in health)’.

[39] לאנהא תמלא אלפם, ibid.

[40] Bacher (1974, 16), Dotan (2007, 634), Eldar (1994, 121, 125).

sources vocalize the name *ḥolem* as a segolate חֶלֶם or חֵלֶם.[41] Some early sources refer to *ḥolem* by the description the 'upper dot' (נקודה עליונה, *al-nuqṭa al-fawqāniyya*) or similar phrases.[42]

Hidāyat al-Qāriʾ states that the place of articulation of the *ḥolem* is the root of the tongue and the 'place of swallowing', i.e. the pharynx[43] and that the 'movement of the vowel (i.e. the airflow in its realization) is across the whole area of the mouth'.[44] According to Saadya's description, *ḥolem* is the vowel that is articulated furthest back in the mouth and its 'strength (i.e. dynamic airflow in its realization) moves forward without deviating upwards or downwards.'[45]

The *Hidāya* interprets the name *shureq* as 'whistling', because it 'gathers the lips together',[46] i.e. the lips are rounded in the position they have when one whistles. The *Hidāya* uses this as a general term to refer to the vowel quality */u/*, including what was later called specifically *qibbuṣ* (i.e. the sign אֻ without a vowel

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[41] Ben Yehuda (1980, vol. 3, 1466-67). The manuscript of Saadya's grammar book has חֵלֶם (Dotan 1997, 447). This vocalization is also found in the Genizah fragment of a Masoretic treatise CUL T-S NS 301.69.

[42] Dotan (2007, 634), Khan (2000, 28).

[43] מחל אלחלם עקר הלשון ובית הבליעה, long version, edition in vol. 2 of this book, §II.L.2.15.1.; (Eldar 1994, 129).

[44] ומסירה עלי סטח אלפם כלה, long version, edition in vol. 2 of this book, §II.L.2.15.1.; Eldar (1994, 129).

[45] וקותה סאלכה אמאמה גיר חאידה אלי פוק ולא אלי אספל (Dotan 1997, 445).

[46] תגְמע אלשפתין, long version, edition in vol. 2 of this book, §II.L.2.14.; Eldar (1994, 125).

letter).[47] It occasionally refers to the sign אֻ, however, by the term *al-zujj* (literally: 'the arrow-head').[48] The term *qibbuṣ* was introduced by Joseph Qimḥi, who categorized them as two separate vowels, the former long and the latter short.[49]

In some medieval sources, including manuscripts of the *Hidāya*, the name *shureq* is vocalized as a segolate שֶׁרֶק.[50] In the Masoretic treatise published by Allony and Yeivin (1985, 92) it has the Aramaic form שרקא. According to the *Hidāya*, the place of its articulation was 'the lips (when) gathered together like (for) whistling.'[51] Likewise, Saadya states that it is pronounced 'between the teeth and the lips'.[52]

In the Karaite transcriptions, long *ḥolem* and long *shureq/qibbuṣ* are normally represented by Arabic *mater lectionis wāw*, e.g.

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[47] In some manuscripts with Non-standard Tiberian vocalization the sign is written reversed, with the three dots sloping up from left-to-right; see Outhwaite (2020).

[48] E.g. long version, edition in vol. 2 of this book, §II.L.2.12.1.6. This term is also used by the author of the *Treatise on the Shewa* (ed. Levy 1936, יט).

[49] Joseph Qimḥi, *Sefer Zikkaron* (ed. Bacher 1888, 17), Bacher (1974, 17).

[50] Dotan (2007, 634).

[51] אלשפתין מצ̇מומתין כאלצפיר, long version, edition in vol. 2 of this book, §II.L.2.15.7.; Eldar (1994, 133).

[52] פי מא בין אלאסנאן ואלשפתיין (Dotan 1997, 447).

هـجادول [haggɔːˈðoːol] (BL Or 2544 fol. 74v, 2 | L [BHS]: הַגָּדֹ֑ל Exod. 3.3 'the great')

تحيُون [tiħˈjuːun] (BL Or 2539 MS A, fol. 93v, 5 | L [BHS]: תִּֽחְי֜וּן Deut. 8.1 'you (mpl) will live')

Sporadically *mater lectionis* *ʾalif* represents *ḥolem* in the transcriptions, e.g.

بثاخام [baθoːˈχɔːɔm] (Genizah MS 12, Khan 1990a, 151 | L [BHS]: בְּתוֹכָ֑ם Num. 19.10 'in their midst')

Such a transcription could be an attempt to represented the lower quality of *ḥolem* compared to that of *shureq/qibbuṣ* rather than a fronted quality of *ḥolem*. This is demonstrated by a transcription of Hebrew liturgical poetry in the Genizah manuscript T-S Ar.37.89,[53] which represents *ḥolem* by *ʾalif*, e.g: نفشا (נַפְשׁוֹ), لعالام (לְעוֹלָם). In this text, the glide between *ḥolem* and a following furtive *pataḥ* is transcribed by *wāw*, demonstrating that the *ḥolem* was pronounced as a back [oː]: وساباوع (וְשָׂבוֹעַ).

I.2.1.8. Medieval Classifications of Vowels

In some sources, the seven Tiberian vowels are classified into the three groups (i) *pataḥ, segol, qameṣ,* (ii) *ṣere, ḥireq* and (iii) *shureq/qibbuṣ, ḥolem* by associating them with three prototype vowels. Saadya, for example, associates each of these groups with the Arabic case vowels *a* (*naṣb* 'holding steady'), *i* (*khafḍ*

[53] The text was published by Razhaby (1983).

'lowering') and *u* (*rafᶜ* 'raising') respectively. He classifies them further within these categories according to the notion of degree of height of the airflow in their production,[54] viz.

al-rafᶜ al-kabīr 'big *rafᶜ*' = *ḥolem*

al-rafᶜ al-ʾaṣghar 'smaller raising' = *shureq*

al-naṣb al-ʾakbar 'greater *naṣb*' = *qameṣ*

al-naṣb al-ʾawsaṭ 'intermediate *naṣb*' = *pataḥ*

al-naṣb al-ʾaṣghar 'smaller *naṣb*' = *segol*

al-khafḍ al-ʾaṣghar 'smaller *khafḍ*' = *ṣere*

al-khafḍ al-ʾakbar 'greater *khafḍ*' = *ḥireq*[55]

Hidāyat al-Qāriʾ makes a similar classification, using both the names of Arabic case vowels (*naṣb*, *khafḍ*, *rafᶜ*) and also the generic names of Arabic vowels (*fatḥa*, *kasra*, *ḍamma*). The Hebrew vowels *pataḥ*, *segol* and *qameṣ*, for example, are identified as variant types of *fatḥa*, which are termed 'big *fatḥa*', 'medium *fatḥa*' and 'small *fatḥa*' respectively. This does not correspond to Saadya's classification of degrees of height but rather relates to varying degrees of lip-spreading. The vowel *pataḥ* was pronounced with the maximal degree of lip-spreading and *qameṣ*

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[54] Eldar (1983), Dotan (1997, 113–14).

[55] Dotan notes that the terms *al-khafḍ al-ʾaṣghar* and *al-khafḍ al-ʾakbar* appear to be referring to a reference point in the middle of the mouth, from which *ḥireq* would constitute a greater lowering than *ṣere*. The other terms have a reference point at the top of the mouth.

with the lowest degree, with *segol* exhibiting an intermediate lip position.[56]

The basic Arabic vowel qualities *a*, *i* and *u* are also associated with the Arabic vowel letters *ʾalif*, *yāʾ* and *wāw*. Any other qualities of Arabic vowels were variations (*furūʿ*) of these basic qualities, e.g. [ɛ] was termed *ʾalif mumāla* 'inclining *ʾalif*' (i.e. inclining towards *i*) and [ɑ] or [ɔ] *ʾalif al-tafkhīm* '*ʾalif* of thickness'.[57] The three-way classification of Tiberian vowel qualities also corresponds to the three Arabic *matres lectionis ʾalif*, *yāʾ* and *wāw* that are the normal transcription of the vowels of these three categories respectively in the Karaite transcriptions, viz. *ʾalif* = *pataḥ*, *qameṣ*, *segol*, *yāʾ* = *ṣere, ḥireq* and *wāw* = *shureq/qibbuṣ*, *ḥolem*.

Hidāyat al-Qāriʾ correlates these groups of vowels with the Hebrew vowel letters (i) *ʾalef/he,* (ii) *yod* and (iii) *vav* when the vowels were pronounced long.[58] This reflects the theory that long vowels were the result of 'soft letters' (*ḥurūf al-līn*), i.e. vowel letters. This theory was borrowed from the Arabic grammatical tradition and developed more systematically by the Hebrew grammarian Ḥayyūj (Spain, early eleventh century). Unlike in Arabic, these vowel letters were sometimes elided in the orthography, especially those of group (i).[59]

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[56] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.3.–§II.L.2.8.

[57] Cf. Sībawayhi, *al-Kitāb* (ed. H. Derenbourg 1889, 452–53).

[58] See *Hidāyat al-Qāriʾ*, short version, edition in vol. 2 of this book, §II.S.4.2.

[59] Eldar (1994, 102–5).

I.2.2. Vowel Length

I.2.2.1. General Principles

The length of vowels represented by the basic vowel signs (i.e. vowel signs that are not combined with *shewa*) is to a large extent predictable from syllable structure and the placement of stress. The general principles are as follows:

> Vowels represented by basic vowel signs are long when they are either (i) in a stressed syllable or (ii) in an unstressed open syllable.
>
> Vowels represented by basic signs that are in an unstressed closed syllable are short.

Examples: מֶ֫לֶךְ [ˈmɛːlɛχ] 'king', נַ֫עַר [ˈnaːʕaʀ̟] 'youth', חָכְמָ֫ה [ħɔχˈmɔː] 'wisdom', הַה֫וּא [haːˈhuː] 'that', יַֽעֲלֶ֫ה [yaːʕaˈlɛː] 'he goes up', שִׁחֲתוּ [ʃiːˈħeːθuː] 'they have ruined' (Nah. 2.3), בֶּרֶכְיָ֫הוּ [bɛːʀ̟ɛχˈjɔːhuː] 'Berechiah' (1 Chron. 2.24).

These principles are clearly reflected by the Karaite transcriptions, which represent long vowels with Arabic *matres lectionis*. They are also referred to in various other medieval sources.[60] Examples from the Karaite transcriptions are presented below.

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[60] In *Hidāyat al-Qāriʾ*, for example, it is stated that the pronunciation of the stressed *pataḥ* in words such as שָׁמַר and זָכַר 'indicates the existence of *ʾalef*' (short version, edition in vol. 2 of this book, §II.S.4.0), i.e. it is pronounced long with a hidden vowel letter. For further references see Hommel (1917, 99f.), Ben-David (1957a, 21–23), Yeivin (1981b, 42); also the Masoretic note to Lev. 1.11 quoted by Wickes (1887, 25): עַ֣ל ח׳

When a long vowel occurs in a closed syllable, an epenthetic vowel is inserted after the long vowel before the syllable-final consonant, e.g. דָּבָ֫ר and שָׁמַ֫ר should be represented as [dɔːˈvɔːɔʀ̟] and [ʃɔːˈmɑːɑʀ̟] respectively. This feature of syllable structure is discussed in detail in §I.2.4.

I.2.2.2. Stressed Syllables

(marked by shading in the roman phonetic transcription)

Qameṣ

שָׂרָ֑ה [sɔːˈʀ̟ɔː] (Gen. 21.7 'Sarah') — سارا (BL Or 2539 MS A, fol. 63r, 1)

נִסָּ֖ה [nisˈsɔː] (Gen. 22.1 'he tempted') — نسا (BL Or 2539 MS A, fol. 66r, 7)

הַדָּבָ֖ר [haddɔːˈvɔːɔʀ̟] (Gen. 21.11 'the word') — هدّابار (BL Or 2539 MS A, fol. 63r, 8)

אַבְרָהָ֑ם [ʔavʀ̟ɔːˈhɔːɔm] (Gen. 21.11 'Abraham') — ابراهام (BL Or 2539 MS A, fol. 63r, 8)

מאריכין בטעם בספרא '8 instances in Leviticus lengthen the particle עַל with an accent'. Lengthening of vowels in open unstressed syllables is alluded to by Saadya in his commentary on *Sefer Yeṣira* (ed. Lambert 1891, 76–77; 1889, 125).

Pataḥ

וַיַּ֫עַשׂ [vaɟˈɟaːʕas] (Gen. 21.8 ‘and he made’) — ويَاعَس (BL Or 2539 MS A, fol. 63r, 3)

הַנַּ֫עַר [hanˈnaːʕɑʀ̟] (Gen. 21.17 ‘the boy’) — هنّاعَر (BL Or 2539 MS A, fol. 64r, 5)

הַמַּ֫יִם [hamˈmaːjim] (Gen. 21.15 ‘the water’) — همّايِم (BL Or 2539 MS A, fol. 64r, 1)

וַיִּגָּמַ֑ל [vaɟɟiggɔːˈmaːal] (Gen. 21.8 ‘and he was weaned’) — ويجامال (BL Or 2539 MS A, fol. 63r, 2)

בַּסְּבַ֫ךְ [bassaˈvaːaχ] (Gen. 22.13 ‘in the thicket’) — بسباخ (BL Or 2539 MS A, fol. 68r, 3)

Segol

הַגֶּ֫בֶר [hagˈgɛːvɛʀ̟] (Psa. 52.9 ‘the man’) — هجابر (BL Or 2551 fol. 9v, 3)

מִפָּנֶ֫יךָ [mippʰɔːˈnɛːχɔː] (Isa. 26.17 ‘before you’) — مفّاناخا (BL Or 2548 fol. 186r, 4)

מִשְׁתֶּ֫ה [miʃˈtʰɛː] (Gen. 21.8 ‘feast’) — منستا (BL Or 2539 MS A, fol. 63r, 3)

בַּרְזֶ֫ל [bɑʀ̟ˈzɛːɛl] (Ezek. 4.3 'iron') — برزال (BL Or 2549 fol. 145r, 4)

אֲבֹתֵיכֶ֫ם [ʔavoːθeːˈχɛːɛm] (Exod. 3.16 'your fathers') — ابوثيخام (BL Or 2544 fol. 77v, 8)

Ṣere

וַתֵּ֫שֶׁב [vatˈtʰeːʃɛv] (Gen. 21.16 'and she sat') — وتيسب (BL Or 2539 MS A, fol. 64r, 4)

הִגָּמֵ֫ל [higgɔːˈmeːel] (Gen. 21.8 'to be weaned') — هجاميل (BL Or 2539 MS A, fol. 63r, 3)

גָּרֵ֫שׁ [gɔːˈʀ̟eːeʃ] (Gen. 21.10 'cast out!') — جاريس (BL Or 2539 MS A, fol. 63r, 6)

Ḥireq

וְהוֹרִ֫דוּ [vohoːˈʀ̟iːðuː] (Deut. 21.4 'and they will bring down') — وهوريذو (BL Or 2539 MS A, fol. 105r, 7)

וַיִּ֫בֶן [vaɟˈɟiːvɛn] (Gen. 22.9 'and he built') — وييبن (BL Or 2539 MS A, fol. 67r, 9)

אִ֫ם [ˈʔiːim] (Gen. 15.4 'if') — ايم (BL Or 2539 MS A, fol. 58r, 4)

מֵן [ˈmiːin] (Exod. 2.7 ‘from’) — مين (BL Or 2540, fol. 6r, 4)

Ḥolem

צְבָאוֹ [sˤɑvɔːˈʔoː] (Gen. 21.22 ‘his host’) — صباو (BL Or 2539 MS A, fol. 64v, 9)

הַגָּדֹל [haggɔːˈðoːol] (Exod. 3.3 ‘the great’) — هجادول (BL Or 2544 fol. 74v, 2)

וּמִגְדָּנֹת [wumiʁdɔːˈnoːoθ] (Gen. 24.53 ‘precious things’) — ومغدانوث (BL Or 2539 MS A, fol. 76v, 4)

Shureq/qibbuṣ

וַיָּקֻמוּ [vajjɔːˈquːmuː] (Gen. 22.19 ‘and they rose up’) — ويا قومو (BL Or 2539 MS A, fol. 68v, 6)

גְּבוּל [gaˈvuːul] (Psa. 78.54 ‘border of’) — جبول (BL Or 2551 fol. 32v, 13)

נְאֻם [nuˈʔuːum] (Jer. 2.22 ‘utterance of’) — ناوم (BL Or 2549 fol. 3v, 12)

יְרִיחֻן [jɑʀiːˈħuːun] (Deut. 4.28 ‘and they (mp) will smell’) — يريحون (BL Or 2539 MS A, fol. 87v, 4)

I.2.2.3. Open Unstressed Syllables

(marked by shading in the roman phonetic transcription)

Qameṣ

הַגָּ֫דֹל [haggɔːˈðoːol] (Exod. 3.3 ‘the great’) — هـجَادول (BL Or 2544 fol. 74v, 2)

יָמֶ֫ים [jɔːˈmiːim] (Jer. 31.38 ‘days’) — يامِيم (BL Or 2549 fol. 93v, 8)

בְּעֵינֶ֫יךָ [beʕeːˈnɛːχɔː] (Gen. 21.12 ‘in your (ms) eyes’) — بعينا̇خا (BL Or 2539 MS A, fol. 63v, 2)

Pataḥ

הַהִ֫וא [haːˈhiː] (Gen. 21.22 ‘that’) — هاهي (BL Or 2539 MS A, fol. 64v, 8)

כַּחֶ֫סֶד [kʰaːˈħɛːsɛð] (Gen. 21.23 ‘like the kindness’) — كاحَاسذ (BL Or 2539 MS A, fol. 65r, 3)

לַחֳ֫דֶשׁ [laːˈħoːðɛʃ] (Neh. 9.1 ‘of the month’) — لاحوذس (BL Or 2556, fol. 52v, 8)

Segol

בֶּחָ֣רֶב [bɛːˈħɔːʀ̟ɛv] (Num. 14.43 'by the sword') — باحارب (Genizah MS 1, Khan 1990a, 26)

וְנֶעֱזָ֑ב [vanɛːʕɛˈzɔːɔv] (Isa. 27.10 'forsaken') — وناعزاب (BL Or 2548 fol. 187r, 12)

נֶעֶשְׂתָ֥ה [nɛːʕɛsˈθɔː] (Num. 15.24 'it [f] was done') — ناعسثا (Genizah MS 1, Khan 1990a, 27)

Ṣere

לָעֵדָ֥ה [lɔːʕeːˈðɔː] (Num. 14.27 'for the congregation') — لاعيذا (Genizah MS 1, Khan 1990a, 23)

אֵלֵ֔ךְ [ʔeːˈleːeχ] (Exod. 3.11 'I will go') — ايليخ (BL Or 2540, fol. 9r, 1)

Ḥireq

מִחֽוּץ [miːˈħuːusˤ] (Deut. 23.11 'from outside') — ميحوص (BL Or 2539 MS A, fol. 113v, 5)

מִחוּט [miːˈħuːutˤ] (Gen. 14.23 'from a thread') — ميحوط (BL Or 2539 MS A, fol. 57r, 8)

Ḥolem

אֱלֹהִ֑ים [ʔɛloːˈhiːim] (Gen. 21.22 'God') — اِلوهيم (BL Or 2539 MS A, fol. 65r, 1)

הָרִֽאשֹׁנִ֑ית [hɔːʀ̟iːʃoːˈniːiθ] (Jer. 25.1 'the first') — هاريشونيث (BL Or 2543 MS A, fol. 5v, 2)

Shureq/qibbuṣ

רְאוּבֵ֖ן [ʀ̟uʔuːˈveːen] (Exod. 1.2 'Reuben') — راوبين (BL Or 2540, fol. 3v, 2)

חֲמֻשִׁ֔ים [ħamuːˈʃiːim] (Josh. 4.12 'those who are armed') — حموشيم (BL Or 2547 fol. 6v, 12)

יֻטָ֑ל [juːˈtˤɑːɑl] (Job. 41.1 'he will be hurled down') — يوطال (BL Or 2552 fol. 85v, 4)

דּוּדָאֵ֣י [duːðɔːˈʔeː] (Jer. 24.1 'baskets of') — دوذاي (BL Or 2543 MS A, fol. 3r, 8)

וַיַּעֲבִ֧דוּ [vaɟɟaːʕaˈviːðuː] (Exod. 1.13 'and they made to serve') — وياعبيذو (BL Or 2540, fol. 4v, 2)

I.2.2.4. Closed Unstressed Syllables

(marked by shading in the roman phonetic transcription)

Qameṣ[61]

קָדְשֵׁ֣י [qɔðˈʃeː] (Num. 18.32 ‘the holy gifts of’) — قِدشي (BL Or 2539 MS B, fol. 126v, 12)

כָּל־ [kʰɔl] (Isa. 38.17 ‘all’) — كل- (BL Or 2548 fol. 32r, 12)

וַתָּ֥מָת [vatˈtʰɔːmɔθ] (Num. 20.1 ‘she died’) — وتامث (BL Or 2539 MS B, fol. 128r, 10)

Pataḥ

וְנִחַמְתִּ֣י [vaniːħamˈtʰiː] (Jer. 26.3 ‘and I will repent’) — ونيحمتي (BL Or 2543 MS A, fol. 8r, 5)

הַזֶּ֑ה [hazˈzɛː] (Jer. 23.32 ‘this’) — هزا (BL Or 2543 MS A, fol. 2r, 7)

Segol

וּלְנֶכְדִּ֑י [wulnɛχˈdiː] (Gen. 21.23 ‘to my posterity’) —ولنخدي (BL Or 2539 MS A, fol. 65r, 3)

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[61] The distinction between long and short *qameṣ* is expressed by the terms *qameṣ gadol* and *qameṣ ḥaṭef* in the works of the early Hebrew grammarians of Spain (Lambert 1889, 124).

כַּחֶ֫סֶד [kʰaːˈħɛːsɛð] (Gen. 21.23 'like the kindness') — كاحَاسِذْ (BL Or 2539 MS A, fol. 65r, 3)

Ḥireq

מִשְׁתֶּ֫ה [miʃˈtʰɛː] (Gen. 21.8 'feast') — منستا (BL Or 2539 MS A, fol. 63r, 3)

אַ֫יִל [ˈʔaːjil] (Gen. 22.13 'ram') — أيل (BL Or 2539 MS A, fol. 68r, 2)

Shureq/qibbuṣ

הַשֻּׁלְחָ֫ן [haʃʃulˈħɔːɔn] (Exod. 25.30 'the table') —هشّلحان (BL Or 2544, fol. 125r, 5)

וַיֻּכּ֫וּ [vaɟɟukˈkʰuː] (Exod. 5.14 'and they were beaten') — وِيكُّو (BL Or 2540, fol. 14v, 6)

The vowels *ḥolem* and *ṣere* are invariably long and have no short variants. This also is essentially dependent on stress and syllable structure, in that they occur only in the aforementioned environments that condition vowel length, e.g. מֵבִ֫יא [meːˈviː] 'brings', שְׁתֵ֫ה [ʃaˈθeː] 'drink!', מְקוֹמ֫וֹ [maqoːˈmoː] 'his place'.

I.2.3. Vowel Phonemes

In order to establish the synchronic phonological representation of the vowels of the Tiberian reading tradition one must

distinguish between (i) vowels which are invariably long and include length in their underlying phonological representation and (ii) vowels whose length is determined by syllable structure and stress so are of unspecified length at a phonological level (Khan 2013g).[62]

I.2.3.1. Vowel Phonemes with a Specified Length Feature

The long vowel phonemes with a length feature specified in their underlying representation include: long *qameṣ /ɔ̄/*, *ḥolem /ō/, ṣere /ē/,* long *shureq /ū/,* long *ḥireq /ī/* (typically written with *yod*), e.g.

שָׁתָ֫ה /ʃɔ̄θɔ̄/ [ʃɔːˈθɔː] 'he drank'

עֵדָ֫ה /ʕēðɔ̄/ [ʕeːˈðɔː] 'community'

בֵּית֫וֹ /bēθō/ [beːˈθoː] 'his house'

ק֫וּמוּ /qū̟mū/ [ˈqu̟ːmuː] 'arise!'

יִירָ֫א /jīrɔ̄/ [jiːˈʀ̟ɔː] 'he fears'

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[62] For an alternative analysis of the phonemes of Tiberian Hebrew based on the phonetic realizations I have reconstructed from medieval sources see Suchard (2018). For phonemic analyses based on earlier views of the phonetic realization of the vowels see, for example, Morag (1962) and Schramm (1964, 63).

I.2.3.2. Vowel Phonemes without a Specified Length Feature

The vowel phonemes unspecified as to length include: *pataḥ /a/, segol /ɛ/, ḥireq /i/, qibbuṣ/shureq /u/*. In principle, these are long when they bear stress, e.g.

עָמַ֫ד /ʕɔ̄mað/ [ʕɔːˈmaːað] ‘he stood’

לָהֶ֫ם /lɔ̄hɛm/ [lɔːˈhɛːɛm] ‘to them’

מִ֫ן /min/ [ˈmiːin] ‘from’

The length of the vowel, therefore, is a phonetic phenomenon induced by stress and is not a feature of the underlying vowel phoneme.

As shown above, vowels of this category represented by basic vowel signs that occur in unstressed closed syllables are short, whereas those that occur in open unstressed syllables are realized as long.

An open syllable with a long vowel (CV̄) can be considered to have the same weight as a closed syllable with a short vowel (CVC). Their codas both contain two weight components, known as morae, and both types of syllable are termed bimoraic. Bimoricity is, in fact, not obligatory in open syllables. There are some cases of short lexical vowels in open unstressed syllables, mainly rounded vowels with the quality of *qameṣ*, indicated in the vocalization by *ḥaṭef qameṣ*, e.g. צֳרִי [sˤɔˈʀ̟iː] ‘balm’, דֳּמִי [dɔˈmiː] ‘silence’ (§I.2.7.). The lengthening of the vowels of unspecified length in open syllables must, therefore, be conditioned by factors other than the need to conform to a principle of canonical bimoricity.

One subset of vowels of this category that are lengthened in open syllables occur before gutturals that were historically geminated, but have now lost their gemination. In traditional descriptions of Hebrew, this is referred to as ‘virtual doubling’ of the guttural, i.e. the vowel is the type one would expect in a syllable closed by gemination of the following consonant. The phonetically long realization of the vowel can be explained as having arisen due to spreading of the vowel in compensation for the lost gemination. This can be represented as the replication of the phoneme thus:

*/hahhū/ > /haahū/ [haːˈhuː] הַהֽוּא ‘that’

*/ʃiħħēθū / > /ʃiiħēθū/ [ʃiːˈħeːθuː] שִׁחֵֽתוּ ‘they have ruined’ (Nah. 2.3),

This can be regarded as a morphologically motivated replication of the vowel, in order to bring the morphological pattern of a word or prefixed particle (definite article or preposition) into line with the pattern of these forms in other contexts, in which they are typically followed by a geminated consonant, e.g. הַבַּיִת /habbajiθ/ ‘the house’, מִפֹּה /mipp^{h}ō/ ‘from here’, שִׁבֵּר /ʃibber/ ‘he shattered’, or have a long vowel phoneme, e.g. הָעָם /hɔ̄ʕɔ̄m/ ‘the people’, מֵעִיר /mēʕīr/ ‘from the city of’, מֵאֵן /mēʔēn/ ‘he refused’.

A second subset of vowels of this category that are lengthened in open syllables occur before gutturals with a *ḥaṭef* vowel, e.g. יַעֲל֫וּ ‘they go up’, הֶעֱלָ֫ה ‘he brought up’, צָהֳרַ֫יִם ‘noon’. Here the lengthening is conditioned by metrical factors. This will be discussed below (§I.2.5.4.).

A third, marginal, subset of vowels of this category that are lengthened in open syllables occur in segolate forms that do not bear the main stress, e.g. בֶּ֣רֶכְיָ֑הוּ [bɛːʀ̟ɛχˈjɔːhuː] 'Berechiah' (1 Chron. 2.24). This also appears to have a metrical motivation (§I.2.6.).

To the category of vowel phonemes that lack a specified length feature we should add also /e/ and /o/. These are represented by the *ṣere* and *ḥolem* vowel signs respectively in the stressed syllable of certain forms. Since stressed vowels are always long, on a phonetic level these are not distinguishable from *ṣere* and *ḥolem* representing phonemes with underlying length. This is necessary to account for apparent discrepancies in the historical development of vowels in several morphological forms, in which *pataḥ* (a vowel with no specified length feature) occurs in parallel with *ṣere* and *ḥolem* (Sarauw 1939, 56–64; Khan 1994). This applies, for example, to nouns with an originally doubled final consonant. In forms deriving from the **qall* pattern the vowel is *pataḥ*, e.g. רַ֫ב [ˈʀ̟ɑːɑv] 'much', and in forms deriving from the **qill* and **qull* pattern, the vowel is *ṣere* and *ḥolem* respectively, e.g. לֵ֫ב [ˈleːev] 'heart', עֹ֫ז [ˈʕoːoz] 'strength'. Such words would all have a vowel of unspecified length on the phonological level /rav/, /lev/, /ʕoz/ and the length would have been a consequence of stress. There is, therefore, no discrepancy in their pattern. The same applies to the underlying phonological representation of the *pataḥ, ṣere* and *ḥolem* in verbal forms of the patterns קָטַל, קָטֵל, קָטֹל; יִקְטַל, יִקְטֵל, יִקְטֹל and in segolate nouns of the patterns נַעַר, סֵפֶר, קֹדֶשׁ, חֳלִי [pausal form], which would have the phonemes /a/, /e/ and /o/ respectively:

עָמַ֫ד /ʕɔ̄mað/ [ʕɔːˈmaːað] ‘he stood’

כָּבֵ֫ד /kʰɔ̄veð/ [kʰɔːˈveːeð] ‘it became heavy’

קָטֹ֫ן /q̟ɔ̄tˤon/ [q̟ɔːˈtˤoːon] ‘it became small’

יִשְׁכַּ֫ב /jiʃkʰav/ [jiʃˈkʰaːav] ‘he lies down’

יִתֵּ֫ן /jittʰen/ [jitˈtʰeːen] ‘he gives’

יִשְׁמֹ֫ר /jiʃˈmoːʀ̟/ [jiʃˈmoːoʀ̟] ‘he guards’

נַ֫עַר /naʕr/ [ˈnɑːʕɑʀ̟][63] ‘youth’

סֵ֫פֶר /sefr/ [ˈseːfɛʀ̟] ‘book'

קֹ֫דֶשׁ /q̟oðʃ/ [ˈq̟oːðɛʃ] ‘holiness'

חֳלִי /ħoly/ [ˈħoːliː] ‘sickness’

In syllables that do not have the main stress, the vowels /e/ and /o/ are generally realized phonetically as [ɛ] or [ɔ] respectively, which overlap in quality with the phonemes /ɛ/ and /ɔ̄/, e.g.

וַיֵּ֫רֶד /vajjēreð/ [vaɟˈɟeːʀ̟ɛð] ‘and he came down’

קָדְשׁוֹ /qoðʃō/ [qɔðˈʃoː] ‘his holiness’

חֳלִ֫י /ħoly/ [ħɔˈliː] ‘sickness’

קֳדָשִׁ֫ים /qoðɔ̄ˈʃīm/ [qɔðɔːˈʃiːim]

A secondary stress may be marked on short [ɔ], and in such cases it is generally lengthened to [ɔː] rather than [oː], as in קֳדָשִׁ֫ים [ˌqɔːðɔːˈʃiːim] ‘holinesses’ (Exod. 29.37).

[63] The second vowel in segolates is epenthetic and does not appear in the underlying phonological form; see §I.2.6.

There are some marginal cases in the Tiberian tradition where short [ɛ] and short [ɔ] are realized as [ɛː] and [ɔː], rather than [eː] and [oː], with the main stress of an accent. The accent in such cases is usually a conjunctive, though sporadic cases of disjunctives are attested, e.g. seven cases of בֶּ֣ן 'son' (Gen. 17.17, Lev. 1.5, Lev. 24.10 [disjunctive *yetiv*], Isa. 8.2, Esther 2.5, 1 Chron. 9.21, Neh. 6.18), three cases of אֶ֣ת object marker/'with' (Psa. 47.5, Psa. 60.2, Prov. 3.12) and at least two cases of כָּ֣ל 'all' (Psa. 35.10, Prov. 19.7),[64] e.g.

בֶּ֣ן יָאִ֔יר (Esther 2.5 'son of Yair')

אֶ֤ת אֲרַ֣ם נַהֲרַ֡יִם (Psa. 60.2 'with Aram-naharaim')

כָּ֥ל אֲחֵֽי־רָ֨שׁ (Prov. 19.7 'all the brothers of a poor man')

This phenomenon is likely to be due to the fact that, in the Tiberian prosodic chant, words that were originally unstressed in an earlier form of the reading tradition were occasionally assigned an accent. Such prosodic 'transformations', according to DeCaen and Dresher (2020), occurred due to the length of a verse and the desire to slow down the chant.

Conversely there are a few sporadic cases of /o/ and /e/ realised with the qualities of [oː] and [eː] in syllables two syllables back from the main stress that may be considered to be the

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[64] These are listed in Masoretic treatises, e.g. *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, sections 6-8), *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.3.2.5., §II.L.3.2.6. The sources differ regarding the number of cases of כָּל with a main stress. Psa. 87.7, which is one of the three cases cited in *Diqduqe ha-Ṭeʿamim*, has a *maqqef* in L [BHS]: כָּֽל־מַעְיָנַ֥י (Psa. 87.7 'all my springs').

result of lengthening by a secondary stress (§I.2.8.2.), although this is not always indicated by the accentuation, e.g.

> אֹהָלִ֑ים [ˌʔoːhɔːˈliːim] (Gen. 25.27 ‘tents’); cf. singular אֹהֶל /ʾohl/ (see §I.2.6. for further details concerning the underlying form)
>
> הֵעֲלָ֑ה [ˌheːʕaˈluː] (Hab. 1.15 ‘he has brought up’) (see §I.2.5.4. for further details concerning the underlying form)

Vowel phonemes without a specified length feature in their underlying form, which have been lengthened through stress or compensatory reduplication (e.g. /haahū/ [haːˈhuː] הַה֫וּא), are vowels that appear to have acquired phonetic length relatively late in the history of the Tiberian tradition. In the Greek transcriptions of the Hexapla of Origen (c. 185–254 C.E.) they are still represented as short where length distinctions could be made in Greek, viz. between the short and long ‘e’ and ‘o’ vowels (Khan 1994). Where Tiberian had lengthened /e/ [eː] and lengthened /o/ [oː], the Hexapla generally has ε and ο respectively, which represented short ‘e’ and ‘o’, as opposed to η and ω, which represented long ‘e’ and ‘o’. Examples:[65]

Verbal forms

> *ααλλελ* (Ambrosiana Palimpsest | L [BHS]: אֲחַלֵּ֑ל Psa. 89.35 ‘I will [not] profane’)
>
> *ουϊεθθεν* (Ambrosiana Palimpsest | L [BHS]: וַיִּתֵּ֥ן Psa. 18.33 ‘and he set’)

[65] Data supplied by Ben Kantor.

ουβαρεχ (Ambrosiana Palimpsest | L [BHS]: וּבָרֵ֥ךְ Psa. 28.9 ‘and bless! (ms)’)

*ουκ*σσες* (Ambrosiana Palimpsest | L [BHS]: וְקִצֵּ֣ץ Psa. 46.10 ‘and [he] shatters’)

ιδαββερ (Ambrosiana Palimpsest | L [BHS]: יְדַבֵּ֣ר Psa. 49.4 ‘[my mouth] will speak’)

ιμαλλετ (Ambrosiana Palimpsest | L [BHS]: יְמַלֵּ֣ט Psa. 89.49 ‘[he] will rescue’)

εχαζεβ (Ambrosiana Palimpsest | L [BHS]: אֲכַזֵּֽב Psa. 89.36 ‘I will lie’)

εεζεκ (Ambrosiana Palimpsest | L [BHS]: הַחֲזֵ֣ק Psa. 35.2 ‘take hold of! (ms)’)

ερδοφ (Ambrosiana Palimpsest | L [BHS]: אֶרְדּ֣וֹף Psa. 18.38 ‘I chase’)

ιαδομ (Ambrosiana Palimpsest | L [BHS]: יִדֹּ֑ם Psa. 30.13 ‘[it will not] be silent’)

ισροφ (Ambrosiana Palimpsest | L [BHS]: יִשְׂרֹ֥ף Psa. 46.10 ‘[he] burns’)

ηζχορ (Ambrosiana Palimpsest | L [BHS]: זְכֹ֣ר Psa. 89.51 ‘remember! (ms)’)

*qill and *qull nominal forms

λεβ (Ambrosiana Palimpsest | L [BHS]: לֵ֣ב Psa. 32.11 ‘heart’)

εμ (Ambrosiana Palimpsest | L [BHS]: אֵ֝֗ם Psa. 35.14 'mother')

βαες (Ambrosiana Palimpsest | L [BHS]: בָּאֵֽשׁ Psa. 46.10 'with fire')

οζ (Ambrosiana Palimpsest | L [BHS]: עֹ֥ז Psa. 30.8 'strength')

λαχολ (Ambrosiana Palimpsest | L [BHS]: לְכֹ֤ל Psa. 18.31 'for all)

Segolate forms

ιεθερ (Ambrosiana Palimpsest | L [BHS]: יֶ֝֗תֶר Psa. 31.24 'remainder/abundance')

ρεγε (Ambrosiana Palimpsest | L [BHS]: רֶ֨גַע Psa. 30.6 'a moment')

κεσθ (Ambrosiana Palimpsest | L [BHS]: קֶֽשֶׁת Psa. 18.35 'bow of (cstr.)')

μενεγδ (Ambrosiana Palimpsest | L [BHS]: מִנֶּ֪גֶד Psa. 31.23 'from before')

δερχ (Ambrosiana Palimpsest | L [BHS]: דֶּ֑רֶךְ Psa. 89.42 '(the) way')

βεχι (Ambrosiana Palimpsest | L [BHS]: בֶּ֗כִי Psa. 30.6 'weeping')

βοκρ (Ambrosiana Palimpsest | L [BHS]: בֹּ֣קֶר Psa. 46.6 'morning')

κορ (Ambrosiana Palimpsest | L [BHS]: קֹ֫רַח Psa. 49.1 'Korah')

Contrast other adjectival and nominal forms, which have η, representing long 'e', as the counterpart of Tiberian *ṣere*, and ω, representing long 'o', as the counterpart of Tiberian *ḥolem*, e.g.

αηλ (Ambrosiana Palimpsest | L [BHS]: הָאֵ֗ל Psa. 18.31 'God')

εκκης (Ambrosiana Palimpsest | L [BHS]: עִקֵּ֗שׁ Psa. 18.27 'crooked')

κωλ (Ambrosiana Palimpsest | L [BHS]: ק֣וֹל Psa. 28.6 'voice')

μαζμωρ (Ambrosiana Palimpsest | L [BHS]: מִזְמ֥וֹר Psa. 31.1 'melody/psalm')

φεδιων (Ambrosiana Palimpsest | L [BHS]: פִּדְי֣וֹן Psa. 49.9 'the redemption of (cstr.)')

The counterpart of stressed *ṣere* and *ḥolem* in most verbal forms that are pausal in the Tiberian tradition are transcribed by the long vowels η and ω respectively in the Hexapla, e.g.

θηληχ (Ambrosiana Palimpsest | L [BHS]: תֵלֵ֑ךְ Psa. 32.8 'you go')

ιησηβ (Ambrosiana Palimpsest | L [BHS]: יֵשֵׁ֑ב Psa. 9.8 'he sits')

ιδαββηροθ (Ambrosiana Palimpsest | L [BHS]: יְדַבֵּ֑רוּ Psa. 35.20 'the speak')

ιαλληλου (Ambrosiana Palimpsest | L [BHS]: יְחַלֵּ֑לוּ Psa. 89.32 'they violate')

ιεσμωρου (Ambrosiana Palimpsest | L [BHS]: יִשְׁמֹֽרוּ׃ Psa. 89.32 'they (do not) keep')

This evidence supports the assumption that the *ṣere* and *ḥolem* in such forms are the phonemes /ē/ and /ō/ with a length feature. Segolate nouns and nouns with the historical pattern **qill* and **qull* that are pausal in Tiberian tradition, by contrast, are transcribed in the Hexapla with ε and ο (see the lists above).

There is one possible case in the Hexapla corresponding to forms such as נִחַ֫ם 'he was comforted' מִחֽ֫וּץ 'outside' with 'virtual doubling' of the guttural. The case in question is the following:

μερεσθ (Ambrosiana Palimpsest | L [BHS]: מֵרֶ֣שֶׁת Psa. 31.5 'from (the) net')

Here the *resh* has lost its gemination and the transcription represents the preceding vowel as short. This form is interpreted by Kantor (2017, 223) as equivalent to forms with *ḥireq* in Tiberian such as מִחוּץ, i.e. the forebear of a hypothetical form מִרֶשֶׁת. If this is correct, this would be evidence that the vowel before 'virtual doubling' that we are proposing was a vowel phoneme without a specified length feature in Tiberian was represented as short in the Hexapla like other vowels of this category.

I.2.4. Long Vowels in Closed Syllables

When long vowels with the main stress occur in closed syllables, there is evidence that an epenthetic with the same quality as that

of the long vowel occurred before the final consonant in its phonetic realization, e.g. (syllable boundaries are marked by dots):

קֹ֫ול /q̟ōl/ [ˈq̟oː.ol] ‘voice’

יָ֫ד /jɔ̄ð/ [ˈjɔː.ɔð] ‘hand’

לָקֹ֫ום /lɔ̄q̟ūm/ [lɔː.ˈq̟uː.um] ‘to rise’

הִשְׁמִ֫יד /hiʃmīð/ [hiʃ.ˈmiː.ið] ‘he destroyed’

בֵּ֫ית /bēθ/ [ˈbeː.eθ] ‘house of’

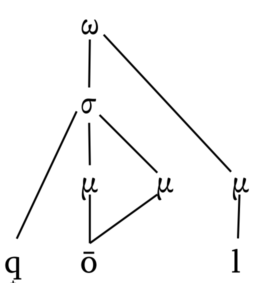
This syllable split on the phonetic level was not represented in the vocalization notation since it did not change the vowel quality. On account of the lack of change in phonetic quality across the syllable boundary the epenthetic syllable could not have been very distinct perceptually.

The most compelling evidence for the insertion of an epenthetic in a closed syllable with a long vowel phoneme is the so-called furtive *pataḥ*, e.g. ר֫וּחַ [ˈʀ̟uː.aħ] ‘spirit’. This short [a] vowel is to be interpreted as the epenthetic vowel, which has shifted quality through assimilation to the vocal tract configuration of the following laryngeal or pharyngeal. If the whole of the vowel nucleus were a unitary long vowel in the same syllable, one would have expected the assimilation to affect it as a unit.[66]

[66] The splitting of a long vowel into two syllable nuclei is a phenomenon that is attested in the Samaritan reading tradition, e.g. *rēʾoš* ‘head’ (= Tiberian ראשׁ), which, according to Ben-Ḥayyim (2000, 67), developed from **rōoš* with the first nucleus dissimilating.

The occurrence of this epenthesis appears to reflect a constraint against syllables heavier than two morae. An open syllable with a long vowel (CV̄) and a closed syllable with a short vowel (CVC) are bimoraic, i.e. they have two morae in their codas, whereas a closed syllable with a long vowel (CV̄C) would have three morae. The constraint causes the CV̄C syllable to be broken into two bimoraic syllables on the phonetic level CV̄.VC.

The underlying syllable structure of a word such as קוֹל could be represented thus: /q̟ō.l/, with a stray extrasyllabic consonant. This follows from the assumption that the epenthetic vowel must have been added at the phonetic level and the aforementioned constraint against superheavy syllables must have existed also at the underlying level. Following the analysis by Kiparsky (2003) of Arabic syllable structure, we may say that such unsyllabifiable consonants at the underlying level, or 'word-level' according to Kiparsky's terminology, are licensed by morae adjoined to the higher node of the prosodic word rather than the syllable node. Kiparsky refers to these consonants as 'semisyllables'. In the following tree ω = prosodic word, σ = syllable, and μ = mora:



/q̟ō.l/ 'voice'

We may postulate that the epenthetic is added at the phonetic level, or 'post-lexical level' according to the terminology of lexical semantics used by Kiparsky, to turn the semisyllable into a syllable, i.e. /qō.l/ [qoː.ol], since in Tiberian Hebrew semisyllables were not allowed at the phonetic level. The underlying syllable structure of the other examples given above would, therefore, be /jɔ̄.ð/, /lɔ̄.q̟ū.m/, /hiʃ.mī.ð/ and /bē.θ/.

It will be argued (§I.2.6.) that in the metrical parsing the epenthetic in the phonetic syllable structure of a word such as [ˈq̟oː.ol] belonged together with the preceding long vowel in the same prosodic foot.[67] This foot would have consisted of a trochaic metrical pattern with a strong syllable followed by a weak epenthetic syllable. This can be represented as follows, where brackets enclose the foot and * = strong beat:

[ˈq̟oː.ol]

(* .)

In the examples given above of epenthesis the closed syllables have a vowel phoneme with inherent length. There are some words with furtive *pataḥ* in a word-final stressed closed syllable that, according to their etymology, would be expected to have an underlying vowel phoneme without a length specification. This applies to the **qull* noun forms רֹעַ [ˈʀ̟oːaʕ] 'badness' (< **ruʿʿ*, root רעע) and מֹחַ [ˈmoːaħ] 'marrow' (< **muḥḥ*, root מחח). The constraint against syllables heavier than two morae and the splitting

[67] J. McCarthy (1979, 155) also proposed that such syllables were feet containing 'two rhyme nodes', though he did not identify an epenthetic in his framework of analysis.

of the final consonant from the rest of the syllable would have operated here at the phonetic level only after the phoneme had been lengthened at the phonetic level by stress, i.e. /roʕ/ [ˈʀ̟oː.aʕ]. We should analyse, therefore, the syllable structure of short vowel phonemes that are lengthened by stress in syllables without a furtive *pataḥ* as having epenthetic vowels with the same quality of the vowel on the phonetic level, thus:

עָמַ֫ד /ʕɔ̄.mað/ [ʕɔː.ˈmaː.að]

לָכֶ֫ם /lɔ̄.χɛm/ [lɔː.ˈχɛː.ɛm]

עֹ֫ז /ʕoz/ [ˈʕoː.oz]

לֵ֫ב /lev/ [ˈleː.ev]

The existence of the vowel split on the phonetic level in closed syllables with a long vowel is also reflected by the phenomenon of *nesiga.* This is a metrical measure to avoid the clash of two accents, whereby the stress represented by a conjunctive accent in the first of a sequence of two words is retracted when the second word has initial stress (Praetorius 1897; Revell 1983; Yeivin 1980, 236–40). It most regularly occurs when the first word ends in an open syllable or else a closed syllable that contains a vowel phoneme without a length specification, in particular *pataḥ* and *segol*, e.g.

מָ֣לֵא מָ֑יִם (Psa. 65.10 'full of water')

הֵ֣בִיא לָ֑נוּ (Gen. 39.14 'he has brought for us')

תֹּ֣אכַל לֶ֔חֶם (Gen. 3.19 'you will eat bread')

וִ֣יפַת תֹּ֔אַר (1 Sam. 25.3 'beautiful of form)

עֲשִׂ֫יתֶם לֹו (Jud. 9.16 'you have done to him')

The accent is in principle not retracted when it falls on a closed syllable containing a long vowel phoneme, e.g.

לָצ֫וּד צָ֫יִד (Gen. 27.5 'to hunt for game')

אָשִׁ֫יב לָֽךְ (Zech. 9.12 'I will restore to you')

נִינָ֫ם יָ֫חַד (Psa. 74.8 'we will oppress them together')

שְׂרֻפ֫וֹת אֵ֫שׁ (Isa. 1.7 'burnt by fire')

יֹשֵׁ֫ב שָׁ֫ם (1 Kings 17.19 'he is dwelling there')

Praetorius (1897, 16) already suggested that the long vowels in stressed closed syllables that fell adjacent to another stressed syllable, as in the examples cited above, had an accent with 'two peaks', which tended to split it into a disyllable. According to our formulation, this second syllable can be identified as the result of the insertion of an epenthetic vowel, and this would have acted as a buffer between the two stresses, thus rendering *nesiga* unnecessary:

לָצ֫וּד צָ֫יִד [lɔː.ˈsˁuː.uð ˈsˁɑː.jið].

Likewise, the accent is not retracted from the final syllable when the epenthetic vowel is clearly discernible in the form of a furtive *pataḥ*, e.g.

לְהָרִ֫יחַ בָּ֫הּ (Exod. 30.38 'to smell it')

We have seen that *nesiga* takes place when a vowel phoneme without a length specification occurs in a final closed syllable, e.g. תֹּ֫אכַל לֶ֫חֶם (Gen. 3.19). When stressed, such a vowel would be phonetically long and split by an epenthetic, which

would have rendered retraction unnecessary. The fact that *nesiga* does take place is most easily explained as reflecting that the retraction took place at an earlier historical period, when vowels that are phonemes with unspecified length in the Tiberian tradition were still pronounced short when stressed. The position of the accents would have been fixed at this period.

There is a considerable degree of variation in the occurrence of *nesiga* when a word-final closed syllable contains *ṣere*. Some of this variation reflects the fact that *ṣere* is the realization either of a long vowel phoneme /ē/ or of the vowel phoneme /e/ of unspecified length that is lengthened by stress. Retraction often takes place when the *ṣere* belongs to the latter category, as one would expect from the discussion above. This is the case, for example, in verbal inflections. Since the /e/ phoneme is not stressed, it has the allophone [ɛ], which is represented by *segol*, e.g.

אֵ֤לֶךְ לִי֙ (Cant. 4.6 'I go')

יִוָּ֥תֶר בָּֽהּ (Zech. 13.8 'it will be left in it)

יְכַ֥חֶשׁ בָּֽהּ (Hos. 9.2 'it will fail them')

In some cases, there is retraction of an accent on *ṣere* in a closed syllable even where it would be expected to be a long /ē/ phoneme. This is found especially in participles, which are nominal forms. When this occurs, the *ṣere* remains long (generally indicated by a *gaʿya*), since its length is not dependent on stress, e.g.

אֹ֣הֵֽב דָּ֑עַת (Prov. 12.1 'loves knowledge')

שֹׁ֥לֵֽף חָֽרֶב (Jud. 8.10 'drawing a sword')

לִמְתָ֣עֵב גּ֗וֹי (Isa. 49.7 ‘one abhorred by the nations’)

Retraction even takes place in such forms where the *ṣere* occurs before a guttural and has a furtive *pataḥ*, e.g.

בּ֣וֹקַֽעַ מַ֔יִם (Isa. 63.12 ‘cleaving the waters’)

מֹ֣נֵֽעַ בָּ֭ר (Prov. 11.26 ‘one who holds back grain’)

This retraction in forms with a long /ē/ phoneme in participles may be due to analogy with the retraction in verbal forms with *ṣere*, where the *ṣere* is a realization of the phoneme /e/ without a specified length feature. It is significant to note that the vowel corresponding to the *ṣere* in the final syllable of participles in the Greek transcriptions of the Hexapla is normally *η*, which represents a long vowel, but in one case ε, which represents a short vowel, e.g.[68]

αννωθην (Ambrosiana Palimpsest | L [BHS]: הַנּוֹתֵ֣ן Psa. 18.48 ‘the one who gives’)

νωσηρ (Ambrosiana Palimpsest | L [BHS]: נֹצֵ֣ר Psa. 31.24 ‘preserving’)

ωζηρ (Ambrosiana Palimpsest | L [BHS]: עֹזֵ֥ר Psa. 30.11 ‘helper’)

ααφης (Ambrosiana Palimpsest | L [BHS]: הֶ֝חָפֵ֗ץ Psa. 35.27 ‘the one who delights’)

μαλαμμεδ (Ambrosiana Palimpsest | L [BHS]: מְלַמֵּ֣ד Psa. 18.35 ‘trains (ms)’)

[68] Data supplied by Ben Kantor.

In the Hexapla, ε is the counterpart of Tiberian *ṣere* also in verbal forms (§I.2.3.2.). This isolated use of ε in a participle may likewise reflect the fact that the vowel has undergone partial analogical levelling with that of the verbal inflections.[69] Other nominal and adjectival forms regularly have η, representing long 'e', as a counterpart of *ṣere* in the Tiberian tradition, e.g.

> αηλ (Ambrosiana Palimpsest | L [BHS]: הָאֵ֗ל Psa. 18.31 'God')

> εκκης (Ambrosiana Palimpsest | L [BHS]: עִקֵּ֗שׁ Psa. 18.27 'crooked')

A typological parallel to the hypothesized insertion of an epenthetic vowel in closed syllables containing a long vowel in Tiberian Hebrew existed in Classical Arabic. According to the medieval Arabic grammars and works on the recitation of the Qurʾān, when a long vowel occurred in a closed syllable on account of a subsequent geminated consonant, e.g. *šābbatun* 'young woman', *qūṣṣa* 'he was avenged', the long vowel was pronounced longer than a long vowel in an open syllables.[70] The grammarian Ibn Jinnī in his work *al-Khaṣāʾiṣ* states that this phenomenon arose from the fact that syllables such as *šāb* and *qūṣ* contained the inadmissible sequence of two quiescent letters.

[69] Yuditsky (2017, 153–54) and Brønno (1943, 260) argue that the short vowel is because the form is in construct with what follows. Such an explanation, however, is not totally satisfactory because other nominal forms with final η in the Hexapla transcription do not necessarily shorten in construct (Ben Kantor, personal communication).

[70] See the sources cited by Roman (1983, 720–21).

In the Arabic grammatical tradition, a long vowel was thought to consist of a short vowel + quiescent letter of extension (*ḥarf al-madd*) or 'soft' letter (*ḥarf al-lin*), i.e. *šā* (شا) would be analysed as *šīn* + *a* + quiescent soft *ʾalif.* This theory was introduced into the medieval tradition of Hebrew grammar by Ḥayyūj. The extra length of the vowel in closed syllables is said by Ibn Jinnī to have occurred 'as a substitute for the short vowel that is necessitated by the clustering of two quiescent letters'.[71] The Arabist André Roman has proposed that the syllable structure described by Ibn Jinnī should be represented as *šaa-ab* etc.,[72] i.e. the overlong syllable is split by an epenthetic vowel of the same quality as the preceding long vowel. This sequence of long vowel + epenthetic would have been perceived as an extra-long unitary vowel. Roman suggests that the onset of the syllable of the epenthetic vowel was constituted by a light constriction of the vocal folds. This form of syllable onset was attested elsewhere as a weak variant of the glottal stop (*hamza*), called by Sībawaihi *hamza bayna bayna* ('sound between *hamza* and zero'). Although the virtually null articulation of the *hamza bayna bayna* was, in effect, simultaneous with the beginning of the subsequent vowel, it formed sufficient division between two vowels for the resultant structure to be scanned as two syllables in poetry.[73]

It is reasonable to assume that the onset of the phonetic syllable arising from the insertion of the epenthetic after a long vowel in closed syllables in the Tiberian reading tradition of

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[71] See Roman (1983, 722-23).

[72] Roman (1983, 723).

[73] For the *hamza bayna bayna* see Roman (1983, 333).

Hebrew was analogous to the Classical Arabic *hamza bayna bayna,* i.e. a very light constriction of the vocal folds. As in Arabic, this would have been hardly perceptible but nonetheless sufficient to mark a syllabic boundary for metrical purposes.

When the epenthetic in such syllables in the Tiberian tradition was a furtive *pataḥ*, the onset of the phonetic syllable containing the epenthetic would have been a glide homorganic with the quality of the preceding vowel. The medieval Karaite lexicographer al-Fāsī refers to the existence of a bilabial glide in words in which the vowel before the furtive *pataḥ* is *shureq* or *ḥolem*:

> Whenever the accent is on the letter before a *vav*, its pronunciation is light, between the lips, as in רֽוּחַ 'spirit' and נִיחֹֽחַ 'soothing'.[74]

Glides before furtive *pataḥ* are mentioned also in a Genizah fragment of a Masoretic treatise:

> If one of the letters ה, ח or ע occurs at the end of a word and under the letter before it there is either אִ or אֵ, then they are separated by יַא (i.e. [ja]), as in וְשָׁמֵעַ 'and he heard', שָׂמֵחַ 'joyful', פֹּרֵחַ 'flourishing', מַשְׁמִיעַ 'causing to hear'. If אֹ is over it, they are separated by וַא (i.e. [wa]), as

[74] *Kitāb Jāmiʿ al-ʾAlfāẓ*, ed. Skoss (1936, vol. 2, 451-452): כל ויו יכון אללחן פי אלחרף אלדׄי קבלה יכון כׄרוגׄה מכׄפף בין אלשפתין מתׄל רֽוּח ניחֹֽוח. See §I.1.6. for further details.

in שָׁמוֹעַ ‘hearing’, נִיחֹחַ ‘fragrant’, and it אוּ occurs, cases such as יְהוֹשֻׁעַ ‘Joshua’.[75]

Such a glide is the result of a slight dip in the sonority of the preceding vowel. This can be represented in the phonetic transcription of a word such as רֽוּחַ thus: [ˈʀ̟uːwaħ]. A word with a *ḥireq* or *ṣere* before furtive *pataḥ* can be represented with a palatal glide thus: שִׂיחַ [ˈsiːjaħ] ‘plant’.

In most modern reading traditions in Arabic-speaking Jewish communities the glide before the furtive *pataḥ* is geminated (Morag 1952), e.g.

Baghdad

jesoˈḥejjaḥ (Morag 1977, 55 | L [BHS]: יְשׂוֹחֵ֑חַ Isa. 53.8 ‘[who] considers … ?’)

ˈruːwwaḥ (Morag 1977, 55 | L [BHS]: רֽוּחַ Ecc. 11.4 ‘spirit’)

Jerba

haˈreˑj̥jaʕ (Katz 1977, 87 | L [BHS]: הָרֵ֑עַ Isa. 1.16 ‘doing evil’)

ˈruwwaḥ (Katz 1977, 87 | L [BHS]: ר֣וּחַ Deut. 34.9 ‘spirit of’)

In some traditions, the gemination of the glide alternates with the lack of it, e.g.

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[75] CUL T-S NS 301.32: ואן אתפק אכר כלמה חרף מן הׄחׄעׄ וכאן תחת אלחרף אלדי קבלה אמא אִ או אֵ ופתח בינהמא בִּיַא מתל וְשָׁמֵעַ שָׂמֵחַ פֹּרֵחַ מַשְׁמִעַ ואדא כאן עליה אׄ פתח בינהמא בְוַא מתל שָׁמוֹעַ נִיחֹחַ ואן אתפק אוּ מתל יְהוֹשֻׁעַ.

Yemen

rejjaħ ~ reːjaħ (Morag 1963, 134 | L [BHS]: רֵ֣יחַ Cant. 2.13 ‘fragrance’)

jaʤʤijjah ~ jaʤʤiːjah (Morag 1963, 134 | L [BHS]: יַגִּ֥יהַ Isa. 13.10 ‘[he] will lighten’)

nɵwwaħ ~ nɵːwaħ (Morag 1963, 134 | נֹחַ ‘Noah’)

ruwwaħ ~ ruːwaħ (Morag 1963, 134 | רוּחַ ‘spirit’)

In some of the Karaite transcriptions, an Arabic *shadda* sign is written over the glide, indicating that it was read as geminated in some variations of the Tiberian tradition already in the Middle Ages, e.g.

روّح (BL Or 2555 fol. 23r, 1 | L [BHS]: רְוּחַ Ecc. 4.4 ‘spirit’)

مجيّع (BL Or 2555 fol. 86v, 10 | L [BHS]: מַגִּ֥יעַ Ecc. 8.14 ‘that which reaches’)

هنّوغيّع (BL Or 2559, fol. 5v, 13 | L [BHS]: וְהַנֹּגֵ֙עַ֙ Lev. 22.4 ‘whoever touches’)

It is attested also in some medieval manuscripts of Rabbinic Hebrew, e.g. הַטִּיַּח (Mishnah, *Kelim* 5.10 ‘the plastering’).[76]

The strengthening of the glide by gemination can be regarded as a measure to preserve it. It results in the fortition of the second vocalic mora of the preceding long [uː] or [iː] vowel, thus:

[76] Epstein (1950), Morag (1952, 236).

[Cuu] > [Cuw], e.g. [ˈʀ̟uːwaħ] > [ˈʀ̟uwwaħ]

[Cii] > [Cij], e.g. [magˈgiːjaʕ] > [magˈgijjaʕ]

The geminated [j] would, according to the normal principles of Tiberian pronunciation be realized as [ɟɟ], so a more accurate transcription would be [magˈgiɟɟaʕ].

A similar type of gemination of glides is reflected in other contexts in the standard Tiberian vocalization, e.g. אֲדֹמִיִּ֜ים (1 Kings 11.17 'Edomites'), רְמִיָּ֑ה (Job 13.7 'deceit'), וְהַשְּׁתִיָּ֥ה (Esther 1.8 'and the drinking'). This too is likely to have developed as a measure to preserve the glide. The vulnerability of such glides is shown by gentilic forms such as הַמִּצְרִים֙ (Gen. 12.14 'the Egyptians' < **hammiṣrīyīm*).

In the Samaritan reading tradition, gemination of the glides [w] and [j] is normal between vowels. In many such cases an original guttural has been lost between the vowels (Ben-Ḥayyim 2000, 38–39), e.g.

muwwåb (מוֹאָ֑ב Gen. 19.37 'Moab')

ʾēluwwəm (אֱלֹהִ֑ים Gen. 1.1 'God')

ruwwi (רוּחִ֤י Gen. 6.3 'my spirit')

miyyå̄dåm (מֵֽאָדָם֙ Gen. 6.7 'from man')

miyyor (מֵא֣וּר Gen. 11.31 'from Ur')

miyyēləb (מֵחָלָֽב Gen. 49.12 'than milk')

A possible example of the opposite process is the reading by Ben Naftali of the word יִיָּרֶ֔ה (Exod. 19.13 'he will be shot') as יִיָרֶ֔ה without gemination of the second *yod*, which is reported in

Kitāb al-Khilaf (ed. Lipschütz 1965, יא־יב). This would reflect an original [Cij] shifting to [Cii].

In modern reading traditions in the Middle East, the furtive *pataḥ* often receives a secondary or, in some cases, a second main stress, e.g.

Jerba

haˈreˑj.jaʕ (Katz 1977, 87 | L [BHS]: הָרֵעַ Isa. 1.16 'doing evil')

ˌhoˈfeːjˈjaʕ (Katz 1977, 87 | L [BHS]: הוֹפִ֫יעַ Deut. 33.2 'he shone forth')

This phenomenon is reflected already in some Karaite transcriptions, in which the furtive *pataḥ* is represented by *mater lectionis ʾalif*, e.g.

اخنياع (BL Or 2551 fol. 42r, 7 | L [BHS]: אַכְנִ֑יעַ Psa. 81.15 'I shall subdue')

هوخياح توخياح (BL Or 2551 fol. 66r, 3 | L [BHS]: הוֹכֵ֤חַ תּוֹכִ֙יחַ֙ Lev. 19.17 'you shall surely rebuke')

It is likely that the purpose of this measure was to preserve the furtive *pataḥ*.

In some manuscripts with Non-Standard Tiberian vocalization, a furtive *pataḥ* is not marked before a guttural where it occurs in standard Tiberian vocalization, e.g.

Genizah manuscripts

פִּתֵּ֥ח (T-S A11.1, Blapp 2017, 48 | L [BHS]: פִּתֵּ֥חַ Job 39.5 ‘he has loosened’)

מוֹכִ֣יחְ (T-S A11.1, Blapp 2017, 47 | L [BHS]: מוֹכִ֣יחַ Job 40.2 ‘he who reproves’)

מַדּ֫וּעְ (T-S A12.1, Blapp 2017, 71 | L [BHS]: מַדּ֫וּעַ Ruth 2.10 ‘why?’)

בִּזְר֣וֹעְ (T-S A13.18, Blapp 2017, 125 | L [BHS]: בִּזְר֣וֹעַ Psa. 89.11 ‘with an arm of’)

European manuscripts

וְלִנְטֹ֫עְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וְלִנְטֹ֫עַ Jer. 18.9 ‘and to plant’)

יַגִּ֣יהְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: יַגִּ֣יהַּ Isa. 13.10 ‘it (does not) shine’)

פִּסֵּ֣חְ (ASCAMO 57.2 v, Pilocane 2004, 29 | L [BHS]:פִּסֵּ֣חַ 2 Sam. 9.13)

As can be seen, in some cases a *shewa* is marked on the final guttural, which is a common practice in Non-Standard Tiberian manuscripts (§I.1.8., §I.1.16.). The vocalization, however, reflects the absence of furtive *pataḥ*. A furtive *pataḥ* is absent also in many manuscripts with Palestinian vocalization.[77]

It is also omitted in some modern reading traditions of the Mishnah, e.g.

[77] Morag (1959, 233), Katz (1977, 87), Bauer and Leander (1922, 112–13).

Yemen

pɵːħeːħ (Morag 1963. 128 | פּוֹחֵחַ Mishnah, *Megillah* 4.6, ‘clad in rags (ms)’)

The development of the furtive *pataḥ* after close ([iː], [uː]) and close-mid ([eː], [oː]) long vowels before gutturals in the Tiberian tradition was the result, as remarked above, of giving the epenthetic after the long vowel a quality that is compatible with the vocal tract configuration of the guttural. This is likely to have had the orthoepic motivation of increasing the perceptibility of the guttural in order to ensure that it was preserved in the reading. The reading traditions that lacked furtive *pataḥ* were more lax in the measures they took to preserve the gutturals in this respect. It is significant to note that the Samaritan tradition, which in its modern form has lost a large proportion of the gutturals, does not reflect the historical presence of a furtive *pataḥ* (Ben-Ḥayyim 2000, 38–39), e.g.

wrū (BHS: וְר֣וּחַ Gen. 1.2 ‘and the spirit of’)

zā̊ˈru (BHS: זְר֖וֹעַ Deut. 33.20 ‘arm’)

šū (BHS: שֽׁוּעַ Gen. 38.2 ‘Shua’)

mazˈrī (BHS: מַזְרִ֣יעַ Gen. 1.11 ‘producing seed’)

ʾarqi (BHS: רָקִ֖יעַ Gen. 1.6 ‘expanse’)

I.2.5. *SHEWA* AND *ḤAṬEF* VOWELS

I.2.5.1. Principles of Phonetic Realization and Graphical Marking

I.2.5.1.1. Default Realization of *Shewa*

The *shewa* (שְׁוָא) sign (אְ) in the Tiberian vocalization system was read either as a vowel or as zero.[78] When *shewa* was read as vocalic, its quality in the Tiberian tradition was by default the same as that of the *pataḥ* vowel sign, i.e., the maximally low vowel [a], e.g.

> תְּכַסֶּ֣ה [tʰaχasˈsɛː] 'you (ms) cover' (Job 21.26)
>
> מְדַבְּרִ֑ים [maðabbaˈʀ̟iːim] 'speaking' (mpl) (Esther 2.14)

This [a] vowel is the outcome of a type of vowel reduction. Vowel reduction processes cross-linguistically usually result in

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[78] Various other terms are used in the early sources to refer to the *shewa* sign, such as the Arabic terms *nuqṭaṭayn qāʾimatayn* 'two dots standing upright' and *jazm* 'cutting off', both found in the works of Saadya. Moreover in some sources the word *shewa* is spelt with a *bet* (שבא). For details see Dotan (1953), Allony (1973, 105, n.165). In the early medieval sources a terminological distinction was made between *shewa* and the vowels, the latter being referred to by Hebrew terms such as מלכים 'kings', סימנים 'signs', נעימות 'melodies', תנועות 'movements' or Arabic terms such as *mulūk* 'kings', *naghamāt* 'melodies', *muṣawwitāt* 'sounding forms', *ḥarakāt* 'movements' and *ʾanḥāʾ* 'inflections'. See, for example, *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.2.1., also Allony (1963), Posegay (2020).

loss of prominence, involving centralization and truncating duration. It has been recognized, however, that in some languages reduction involves pushing the vowels to the edges of the vowel space.[79] In some documented cases, this involves lowering vowels to [a], which is the vowel quality with the highest sonority.[80] This can be regarded as a strategy for preventing loss of prominence and maintaining duration. Such a strategy would be compatible with the conservative nature and orthoepic tendencies of the Tiberian tradition.

Other pre-modern traditions of Hebrew generally exhibit a less sonorous realization of vocalic *shewa*.

In the Greek and Latin transcriptions, it is frequently represented as an [e] quality, e.g.[81]

Septuagint

> *Γέραρα* (Göttingen Septuagint | L [BHS]: גְּרָ֑רָה Gen. 26.1 'to Gerar')
>
> Νετωφὰ (Göttingen Septuagint | L [BHS]: נְטֹפָ֑ה Ezra 2.22 'Netopha')

Origen

[79] See, for example, Crosswhite (2000; 2001; 2004).

[80] E.g. in the unstressed syllables of Belarussian: ˈkol 'pole' > kaˈla 'pole' (genitive); ˈʃept 'whisper' > ʃapˈtatsʲ 'to whisper'. This phenomenon is discussed in the context of Tiberian Hebrew by Himmelreich (2019), although he does not apply it to the vocalic *shewa*.

[81] Data supplied by Ben Kantor.

γεδουδ (Ambrosiana Palimpsest | L [BHS]: גְּד֣וּד Psa. 18.30 'a troop')

σερουφα (Ambrosiana Palimpsest | L [BHS]: צְרוּפָ֑ה Psa. 18.31 'refined')

Jerome

bethula (Commentary on Isaiah, ed. Gryson, III.16.21 | בְּתוּלָה 'virgin' [comments on Isa. 7.14])

mecchenaph (Commentary on Isaiah, ed. Gryson, VIII.7.11 | L [BHS]: מִכְּנַ֤ף Isa. 24.16 'from the edge of')

In Origen, there is sometimes no vowel where Tiberian has a vocalic *shewa*, e.g.

βδαμι (Ambrosiana Palimpsest | L [BHS]: בְּדָמִ֗י Psa. 30.10 'in my blood')

φλαγαυ (Ambrosiana Palimpsest | L [BHS]: פְּלָגָ֗יו Psa. 46.5 'its streams')

In medieval Palestinian vocalization, an [e] (represented below by אׄ) or [i] vowel (represented below by אֻ) is often used where Tiberian and vocalic *shewa*, e.g.[82]

מׄמׄנ[ו]ח (T-S NS 249.6, Dietrich 1968, 78* | L [BHS]: מִמְּנ֖וֹחַ 1 Chr 6.16 'of the resting of')

יׄסבׄבה (T-S 12.195, Kahle 1930, 84 | L [BHS]: יְסוֹבְבֻ֥הָ Psa. 55.11 'they will go round')

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[82] Data supplied by Shai Heijmans.

The older layers of the Babylonian vocalization tradition appear to reflect a tendency to have zero where Tiberian has vocalic *shewa.* This can be inferred, for example, from a vocalization such as the following (Yeivin 1985, §8.13):

יִסוֹד [iːsoːð] (Yeivin 1985, §8.13 | L [BHS]: יְס֫וֹד Lev. 4.25 'the base of')

Here the *yod* is vocalized with *ḥireq*, which appears to have arisen due to the fact that this initial consonant clustered with the second consonant without an epenthetic [jsoːð] > [iːsoːð].

A few modern reading traditions realize vocalic *shewa* as the sonorous [a] vowel, as in Tiberian, e.g.

Yemen

[răfɔ.ˈim] (Yaʾakov 2013, 1014 | L [BHS]: רְפָאִ֫ים Isa. 26.19 'shades')

[lăˈmaʕlɔ] (Yaʾakov 2013, 1014 | L [BHS]: לְמַ֫עְלָה Ezra 9.6 'higher/above')

Western Kurdistan

Šalomo (Sabar 2013, 480 | שְׁלֹמֹה 'Solomon')

našāma (Sabar 2013, 480 | נְשָׁמָה 'soul')

Eastern Kurdistan

tafillim (Sabar 2013, 481 | תְּפִלִּין 'phylacteries')

barit mila (Sabar 2013, 481 | בְּרִית מִילָה 'circumcision')

Kerala (festive reading)

[gaːdoːˈloː] (Forsström 2013, 462 | L [BHS]: גְּדוֹלָ֫ה 'large (fs)' Esther 8.15)

[taˈxeːleːðeː] (Forsström 2013, 462 | L [BHS]: תְּכֵ֫לֶת ‘blue’ Esther 8.15)

In most Sefardi reading traditions vocalic *shewa* is realized higher in the region of [e], e.g.

Baghdad

ˌmətteˈmol (Morag 1977, 67 | L [BHS]: מִתְּמֹ֔ל Exod. 21.29 ‘from yesterday)

Jerba

ʔəgˌgedoˈlaː (Katz 1977, 101 | L [BHS]: הַגְּדֹלָ֗ה Exod. 14.31 ‘the big (fs)’)

Aleppo

ʃeˈne· (Katz 1981, 54 | L [BHS]: שְׁנֵ֥י Gen. 48.1 ‘years of’)

Tripoli

šeˈlumu (Artom 1922, 6 | שְׁלֹמֹה ‘Solomon’)

Tunisia

weroxˈbu (Henshke 2013, 864 | L [BHS]: וְרֹכְב֖וֹ Exod. 15.1 ‘and its rider’)

Karaite traditions (Lithuania, Poland, Ukraine, Crimea and Istanbul)

bʲe-torat (Harviainen 2013, 457 | L [BHS]: בְּתוֹרַ֥ת ‘in the teaching of’ Psa. 119.1)

Italy

metunim (Ryzhik 2013, 363 | מְתוּנִים ‘moderate’ (mpl))

Kerala (regular reading)

> [ʃefiˈpon] (Forsström 2013, 461 | L [BHS]: שְׁפִיפֹ֥ן ‘adder’ Gen. 49.17)

In Morocco, vocalic *shewa* is frequently realized as the high vowel [i], e.g.

> hagidulá (Akun 2010, 186 | L [BHS]: הַגְּדֹלָ֗ה Exod. 14.31 ‘the big (fs)’)

Ashkenazi reading traditions often have zero where Tiberian has a vocalic *shewa*, e.g.

Northeastern Ashkenazi

> [krejˈvɔ] (Katz 1993, 74 | קְרוֹבָה ‘close’)

> [gvul] (Katz 1993, 74 | גְּבוֹל ‘border’)

In some traditions, it is often realized as the central vowel [ə], e.g.

Mideastern Ashkenazi

> [mədiːˈnu] (Glinert 2013, 194 | מְדִינָה ‘country’)

Central Ashkenazi

> [mədiːˈnoː] (Glinert 2013, 196 | מְדִינָה ‘country’)

I.2.5.1.2. Contextually-Conditioned Realization of *Shewa*

In the Tiberian tradition, when vocalic *shewa* occurs before a guttural consonant or the letter *yod,* it was realized with a different quality through an assimilatory process. Before a guttural (i.e.

אהחע) it was realized as a short vowel with the quality of the vowel on the guttural,[83] e.g.

בְּעֶרְכְּךָ֖ [bɛʕɛʀ̟kʰaˈχɔː] 'by your evaluation' (Lev. 5.15)

וְהָיָ֖ה [vɔhɔːˈjɔː] 'and it became' (Gen. 2.10)

בְּאֵ֫ר [beˈʔeːeʀ̟] 'well'

מְאֹ֫וד [moˈʔoːoð] 'very'

מְחִ֫יר [miˈħiːiʀ̟] 'price'

וְחִכֵּ֗ךְ [viħikˈkʰeːeχ] 'and your palate' (Cant. 7.10)

מְעוּכָ֣ה [muʕuːˈχɔː] 'pressed' (1 Sam. 26.7)

Before *yod,* it was realized as a short vowel with the quality of short *ḥireq* [i],[84] e.g.

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[83] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.1, short version, edition in vol. 2 of this book, §II.S.5.1. Some Non-Standard Tiberian manuscripts substitute a vowel sign for the *shewa* in such contexts, explicitly marking the assimilation in quality, e.g. כְּאִמרת[ך] (T-S AS 68.100 | L [BHS]: כְּאִמְרָתְךָ֗ Psa. 119.76 'according to your promise'), יְהִי־לִבִּ֣י (T-S AS 68.100 | L [BHS]: יְהִֽי־לִבִּ֣י Psa. 119.80 'let my heart be'), וְאֶשְׁמַרָה (T-S AS 68.100 | L [BHS]: וְ֝אֶשְׁמְרָ֗ה Psa. 119.88 'and I will keep'), בְּעָנִי (T-S AS 68.100 | L [BHS]: בְעָנְיִֽי Psa. 119.92 'in my affliction') (Outhwaite 2020).

[84] *Hidāyat al-Qāriʾ*, short version, edition in vol. 2 of this book, §II.S.5.2. Saadya, *Kutub al-Lugha* (ed. Dotan 1997, 468–72). *Treatise on the Shewa* (CUL Or 1080.13.3.2, fol. 2v.). Some Non-Standard Tiberian manuscripts explicitly mark this pronunciation before *yod* by vocalizing with a *ḥireq*, e.g. בִיוֹם (T-S AS 44.35 | L [BHS]: בְּי֣וֹם Lam. 3.57 'on the day') (Outhwaite 2020).

בְּיֽוֹם [biˈjoːom] ‘on the day’ (Gen. 2.17)

לְיִשְׂרָאֵל֙ [lijisrˤɔːˈʔeːel] ‘to Israel (Gen. 46.2)

הַתְּיָשִׁ֑ים [hattʰijɔːˈʃiːim] ‘the goats’ (Gen. 30.35)

תְּדַמְּי֣וּן [tʰaðammiˈjuːun] ‘you liken’ (Isa. 40.18)

According to the introduction to *Kitāb al-Khilaf*, where Ben Asher vocalized a preposition ל or ב followed by *yod* thus לְיִשְׂרָאֵל ‘to Israel’, Ben Naftali vocalized the first letter with *ḥireq* with no vowel on the *yod*, i.e. לִישְׂרָאֵל (Lipschütz 1965, 18). The pronunciation of the reading of Ben Asher was [lijisrˤɔːˈʔeːel], the *shewa* being pronounced as [i] before the *yod*. In the reading of Ben Naftali, the sequence [iji] was contracted to a long vowel. As we shall see below, long vowels in syllables closed by a *shewa* must have had an epenthetic of the same quality, as was the case with long vowels in closed syllables in word-final position (§I.2.5.6.). Ben Naftali’s reading, therefore, can be represented [liːisrˤɔːˈʔeːel].

Among the early model manuscripts, C frequently exhibits the type of reading of *shewa* before *yod* attributed to Ben Naftali. Such vocalizations are common also in manuscripts with Non-Standard Tiberian vocalization after the prefixed particles ל, ב and ו, i.e. types of vocalization such as לִישְׂרָאֵל, בִּישְׂרָאֵל, וִישְׂרָאֵל.[85]

[85] For this type of vocalization in Non-Standard Tiberian manuscripts see Ginsburg (1897, 578), Kahle (1930, 58*), Morag (1959, 233–34), Blapp (2017, 40-41, 76, 204).

I.2.5.1.3. *Ḥaṭef* Signs

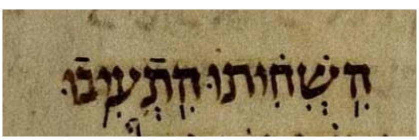
The *shewa* sign is combined with some of the basic vowel signs to form the so-called *ḥaṭef* signs. In the standard Tiberian vocalization these compound signs include:

ḥaṭef pataḥ	(אֲ)	[a]
ḥaṭef segol	(אֱ)	[ɛ]
ḥaṭef qameṣ	(אֳ)	[ɔ]

In such signs the vocalic reading of the *shewa* is made explicit and also its quality.

In the Aleppo Codex (A) there are sporadic examples of a *ḥaṭef ḥireq* sign,[86] e.g.

A: הֶֽשֱׁחִיתוּ הִֽתֱעִיבוּ (Psa. 14.1 'they have acted corruptly and have done abominable deeds' | L [BHS]: הֶֽשְׁחִ֗יתוּ הִֽתְעִ֥יבוּ)



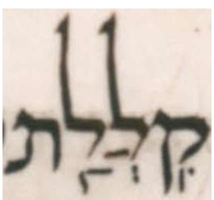
In *ḥaṭef* signs the *shewa* sign is normally placed to the right of the vowel sign. There are, however, some isolated variant forms of *ḥaṭef* signs in the early manuscripts in which the *shewa* sign is placed under or above the vowel sign. When the

[86] There are five cases of this sign in A; cf. Yeivin (1968, 21). *Ḥaṭef ḥireq* is attested also in some manuscripts with Non-Standard Tiberian vocalization.

component signs are stacked in this way, one of the components is sometimes placed inside the open space of the letter under which it is marked. Variants of this nature are attested, for example, in A (Yeivin 1968, 17). In L several of the *ḥaṭef pataḥ* signs are the result of later corrections of an original simple *shewa* sign by the scribe of L, Samuel ben Jacob, or a later hand. In many such cases, the *ḥaṭef* sign is misshapen with the vowel sign component often squeezed into the space above the *shewa* sign (Phillips 2020).



A: הִֽתְפּוֹרְֽרָה֙ ‘it was rent asunder’ (Isa. 24.19)



L: קִֽלְלַ֥ת ‘the curse of’ (Jud. 9.57)

The stacking of *shewa* above the vowel sign and writing inside the letter, especially *ḥet* and *he,* is common in Non-Standard Tiberian manuscripts.[87]

The default pronunciation of vocalic *shewa* with the quality of [a] was equivalent to that of the *ḥaṭef pataḥ* sign (אֲ). Both the

[87] Kahle (1930, 58*), Díez Macho (1963, 37) and Blapp (2017, 79).

vocalic *shewa* and the vowels expressed by *ḥaṭef* signs were short vowels that, in principle, had the same quantity as short vowels in closed unstressed syllables, which were represented in standard Tiberian vocalization by a simple vowel sign. So, the vocalic *shewa* in a word such as תְּכַסֶּה 'you cover' (Job 21.26) would have been read with the same quality and quantity as the *pataḥ* in the closed syllable that follows it: [tʰaχasˈsɛː]. Likewise, the *ḥaṭef pataḥ* in הֲמֶלֶךְ [haˈmɛːlɛχ] 'interrogative + king' would have been read with the same quality and quantity as the *pataḥ* in הַמֶּלֶךְ [hamˈmɛːlɛχ] 'the king'. Evidence for this is found in the *Treatise on the Shewa* published by K. Levy:

> It is an established fact that every letter that has a 'light' (i.e. short) vowel requires a *shewa* unless this is precluded by a *dagesh* (in the following letter), as we exemplified at the beginning of our treatise, הַמֶּלֶךְ—הֲמֶלֶךְ, or by a *shewa* that is adjacent to it, i.e. after it, as in אַבְרָהָם; the *ʾalef* has a short vowel, and were it not for the *shewa* that comes after it, we would have given it a *shewa*.[88]

The author of this treatise did not feel that there was a quantity difference between the vowel written with the *ḥaṭef* sign and the vowel represented by the full vowel sign. In his view, it was the syllable structure that necessitated the notational distinction and not the quantity of the vowel segment. The

[88] ותבת אן כל מכפף פלא בד לה מן שוא בתה אלא אן ימנעה אלדגש כמא מתלנא פי אול קולנא הֲמֶלֶך הַמֶּלֶךְ או ימנעה שוא יכון אלי גאנבה אעני בעדה כקולך אַבְרָהָם אלאלף כפיף ולולא אלשוא אלדי בעדה געלנא לה שוא, ed. Levy (1936, כה). The lacunae in Levy's text can now be supplied from the Geniza manuscript, CUL Or 1080.13.3.2, fol. 2v; cf. Yeivin (1981, 46), Eldar (1988, 127).

shortness of the vowel in a closed syllable was indicated by the *dagesh* or *shewa* on the subsequent consonant. For the sake of economy of notation, no additional sign was added to the vowel sign.

Further evidence for the quantitative equivalence of *shewa* and *ḥaṭef* vowels, on the one hand, and short vowels represented by full vowel signs in closed unstressed syllables, on the other, can be found in the use of the *ḥaṭef* signs and *shewa* in a variety of Non-Standard Tiberian manuscripts from the Cairo Genizah. These manuscripts sometimes represent short vowels in closed unstressed syllables with a *ḥaṭef* sign and represent short [a] in a closed unstressed syllable by a *shewa* sign, e.g.

> לְאֲבְרָהָם (T-S A21.14, Khan 1991, 863 | L [BHS]: לְאַבְרָהָ֥ם Gen. 35.12 'to Abraham')
>
> הַפְּ֖עַם (T-S A2.30 | L [BHS]: הַפַּ֖עַם Exod. 9.27 'this time')[89]
>
> וְאָמְרְתָּ֣ (CUL Or 1080.A3.21 | L [BHS]: וְאָמַרְתָּ֣ Num. 6.2 'and you will say')
>
> בְּשָּׁנָ֖ה (T-S AS 67.133 | L [BHS]: בַּשָּׁנָ֖ה Deut. 14.28 'in the year')

In manuscripts with vocalization, both those in the Genizah and those written in Europe, a *ḥaṭef qameṣ* sign is frequently marked on a closed syllable, e.g.

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[89] The data for this and the following two examples were supplied by Estara Arrant.

Genizah manuscripts

חֳכְֿמֳה (T-S A13.18, Blapp 2017, 125 | L [BHS]: חָכְמָה Psa. 90.12 ‘wisdom’)

וְרֳהְבֳּם (T-S A13.18, Blapp 2017, 125 | L [BHS]: וְ֭רָהְבָּם Psa. 90.10 ‘their strength’)

European manuscripts

נֳכְֿרִ֥י (Codex Reuchlinianus, Morag 1959, 230 | L [BHS]: נָכְרִ֥י 2 Sam. 15.19 ‘foreigner’)

וְחֳגְלָ֫ה (ASCNON B.I.1r, Pilocane 2004, 29 | L [BHS]: וְחָגְלָ֫ה Num. 27.1 ‘Hoglah’)

Even some of the Standard Tiberian Masoretic codices contain a few cases of *ḥaṭef* signs and *shewa* in closed unstressed syllables,[90] e.g.

בַּֽחֲרְטֻמִּ֑ם (L [BHS], Exod. 9.11 ‘on the magicians’)

הָעֲרְבַּ֖יִם (L [BHS], Exod. 30.8 ‘the evening’)

יֶֽחֶזְק֑וּ (L [BHS], 2 Sam. 10.11 ‘they are strong’)

יַעְכֳּרְךָ֛ (L [BHS], Josh. 7.25 ‘he brings trouble on you’)

וַהֲרְגְנֻֽהוּ (L [BHS], Jud. 16.2, ‘and we will kill him’)

לְמֹּ֑לֶךְ (B | L [BHS]: לַמֹּ֑לֶךְ Lev. 20.3 ‘to Molech’)

The *ḥaṭef qameṣ* representing a short *qameṣ* in a closed syllable occurs in a number of imperatives in the model manuscripts in forms that could be confused with suffix conjugation forms with a long *qameṣ*. In such cases, the use of the *ḥaṭef* in a closed

[90] Yeivin (1968, 18), Dotan (1985).

syllable clearly has orthoepic motivations. *Ḥaṭef qameṣ* signs are marked frequently in this context in A (Yeivin 1968, 19), e.g.

וְשֳׁדְד֥וּ (A | L [BHS]: וְשָׁדְד֥וּ Jer. 49.28 'and destroy!')

מֳשְׁכ֔וּ (A | L [BHS]: מָשְׁכ֔וּ Ezek. 32.20 'drag away!')

זֳכְרָ֕ה (A | L [BHS]: זָכְרָ֕ה 2 Chron. 6.42 'remember!')

They are found occasionally in L, e.g.

שֳׁמְרָה (L | A: שָׁמְרָה 1 Chron. 29.18 'keep!', Masora parva in L and A: ל̇ חטף 'unique with short [*qameṣ*]')

According to a medieval source, the Rabbanite authority Hai Gaon (tenth–eleventh centuries) recommended the use of *ḥaṭef qameṣ* in such words to ensure that the vowel was read correctly with a short vowel (Harkavy 1970, 24).

In the Masoretic literature, the root *ḥ-ṭ-p* is, in fact, is employed not only to describe short vowels in open syllables but also those in closed syllables, e.g.

כל לשון יראה געיא כל לשון ראייה חטף

Whenever the verb is from the root 'to fear', (the prefix) has a long vowel (e.g. יִֽרְאוּ [jiːʀ̟ˈʔuː] 'they fear'), whenever it is from the root 'to see', (the prefix) has a short vowel (e.g. יִרְאוּ [jiʀ̟ˈʔuː] 'they see').[91]

Furthermore, in medieval Judaeo-Arabic texts with Tiberian vocalization, *shewa* and *ḥaṭef pataḥ* are used to represent Arabic short /*a*/ in both open and closed syllables, e.g.

[91] Baer and Strack (1879, 31); cf. Ben-David (1957a, 14–15).

אֲלדוּד [ʔalduːd] 'the worm' (T-S Ar. 8.3, fol. 16v, Khan 1992a, 107)

כַלְקְתְני [χalaqtaniː] 'you created me' (T-S Ar. 8.3, fol. 16v, Khan 1992a, 107)

The use of *ḥaṭef* signs to indicate short vowels in unstressed closed syllables was the regular practice in the so-called 'compound system' of Babylonian vocalization. In this variety of Babylonian vocalization, short vowels in both open and closed syllables were regularly represented by different signs from those used to indicate long vowels. Most of the signs marking short vowels were formed by combining a vowel sign with the Babylonian *ḥiṭfa* sign, equivalent to Tiberian *shewa*, and so were formally equivalent to the Tiberian *ḥaṭef* signs. The *ḥiṭfa* sign was placed over the vowel sign in unstressed syllables closed by *dagesh* in Tiberian or under the vowel sign in unstressed syllables closed by *shewa* in Tiberian or by a word-final consonant,[92] e.g.

הׄבׅיט (Tiberian: הִבִּיט [hibˈbiːitˤ] 'he watched')

יׅשמׄר (Tiberian: יִשְׁמוֹר [jiʃˈmoːoʀ̟] 'he guards')

In such compound Babylonian vocalization, the consonant following the vowel is typically not marked by a *dagesh* sign or *shewa* sign (*digsha* and *ḥiṭfa* in Babylonian terminology). The compound Babylonian system, therefore, marked on the vowels what the Tiberian system marked on the following consonant,

[92] For further details see Yeivin (1985, 364–69) and the summaries in Khan (2013f) and Heijmans (2016).

one of the purposes of both being to indicate the shortness of the vowel.

I.2.5.2. Syllabification and Metrical Structure

In the Tiberian Masoretic literature a consonant with a vocalic *shewa* or a *ḥaṭef* vowel sign was not considered to stand independently, but was said to be bound to the following consonant. Thus the word תִּסְפְּר֖וּ 'you shall count' (Lev. 23.16) was considered to have been composed of two prosodic units [tis–paʀ̟u:]. The sources refer to these prosodic units by the Arabic term *maqṭaʿ* (literally: 'point of cutting off'), which is used in the Arabic grammatical literature to refer to a syllable. The treatise *Hidāyat al-Qāriʾ* notes that syllables thus formed have the status of words, i.e., they can stand independently:

> 'Another of its [i.e. the *shewa*'s] features is that it divides a word into (units) that have the status of words. This is because every letter at the end of a word is quiescent when it is deprived of an accompanying vowel and this letter that is deprived of a vowel is the stopping point (*maḥaṭṭ*) of the word and its place of division (*maqṭaʿ*), as in בְּרֵאשִׁית, in which the *tav* is the stopping point of the word, and אוֹר, in which the *resh* is the stopping point of the word, and so forth. A quiescent *shewa* in the middle of a word has the same status, for it is in a sense a stopping point on account of its quiescence, for example וְהָאֲחַשְׁדַּרְפְּנִ֜ים 'and the satraps' (Esther 9.3), הַֽמְצַפְצְפִ֖ים 'those who chirp' (Isa. 8.19). Each

of these two expressions has the status of three words (*ka-lim*) on account of the quiescent *shewa*'.[93]

In various passages in *Hidāyat al-Qāriʾ* there are references to the fact that a vocalic *shewa* or *ḥaṭef* vowel is read more quickly than a following full vowel sign, e.g. 'The *shewa* makes a letter mobile and causes it to be uttered quickly, so that one cannot tarry on that letter',[94] 'The *shewa* moves quickly forwards'.[95] By contrast, a vowel is read more slowly, e.g. 'A vowel has an indissoluble feature, namely slowness and steadiness'.[96] A vocalic *shewa* was considered to be in a subordinate relationship to a following vowel. In some Masoretic treatises, the *shewa* is referred to as a *khādim* 'servant' and the vowels are *mulūk* 'kings'.[97] This would be analogous to the relationship of a conjunctive accent, also referred to in the treatises as a *khādim*, with a following disjunctive accent.

These descriptions can be interpreted as referring to the rhythmic structure of the prosodic unit consisting of a vocalic *shewa* followed by a vowel whereby this unit is a prosodic foot

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[93] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.10.3.

[94] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.4.2.: אלשוא יחרך אלחרף ויסרע בנטקה חתי לא ימכן אחד אן ילבת בדלך אלחרף.

[95] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.4.2.: אלשוא יתחרך בסרעה אלי קדאם.

[96] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.7.: ללמלך עלה לא תפארקה והי אלתבאטי ואלתבאת.

[97] E.g. CUL T-S NS 301.84.

consisting of an iambic metrical pattern with a weak syllable followed by a strong syllable. This can be represented thus: (. *), where the brackets enclose the syllables of the foot, the star * represents the strong prominent syllable and the dot the weak syllable. On a prosodic level, therefore, the phonetic realization of a word such as תִּסְפְּר֖וּ would consist of three syllables parsed into two feet:[98]

[(t^{h}is.) (p^{h}a.ˈʀ̟uː)]

(*) (. *)

A number of features reflect the prosodic weakness of the syllable of a vocalic *shewa*. One feature is the neutralization of the original vowel quality (see below). Another feature is the occasional loss of gemination of a consonant with vocalic *shewa*. This applies in particular to sibilants, sonorants (*yod, lamed, mem, nun*) and *qof*, which constitute relative weak consonants. The omission of the *dagesh* in such forms varies across the medieval manuscripts, e.g. in L:

הַשְׁלַבִּ֑ים ‘the frames’ (1 Kings 7.28, < הַשְּׁלַבִּ֑ים)

וַיְדַבֵּ֥ר ‘and he spoke (Gen. 8.15, etc. < וַיְּדַבֵּ֥ר)

הַֽמְדַבֵּ֥ר ‘the one speaking’ (Gen. 45.12, etc. < הַֽמְּדַבֵּ֥ר ‘the one speaking’)

בַּֽנְחֻשְׁתַּ֫יִם ‘with bronze fetters’ (Jud. 16.21 < בַּנְּחֻשְׁתַּ֫יִם)

[98] Even though he was unaware of the medieval sources described here, J. McCarthy (1979, 162) recognized that the vowel of *shewa* was not shorter in quantity than other short vowels but rather was prosodically weak due to its being bound to the following vowel in a foot.

הַלְלוּ֙ ‘sing praise’ (Jer. 31.7, < הַלְּלוּ֙)

יְבַקְשׁ֒וּ ‘let them seek’ (1 Sam. 16.16, < יְבַקְּשׁ֒וּ)

The Masoretic notion of *maqṭaʿ*, therefore, can be equated with the notion of foot in the prosodic hierarchy rather than syllable.

In the representation above of the prosody of the תִּסְפְּר֥וּ it will be noticed that the first syllable by itself has the status of a foot, i.e. [(tʰis.) (pʰa.ˈʀ̟uː)], where feet are marked by rounded brackets. This is in conformity with the current state of research on the typology of the metrical phonology of the world’s languages. The foot (pʰa.ˈʀ̟uː), as remarked, is iambic, i.e. it consists of two syllables, of which the second is the stronger. It is a binary foot consisting of a light syllable with one mora, viz. CV, and a heavy syllable consisting of two morae, viz. CVV. In many languages with metrical phonology with binary feet, the feet may be binary either in the number of their syllables, as in the foot (CVCVV), which is known as a syllabic foot, or in the number of their morae, known as a moraic foot. This means that a heavy syllable with two morae, viz. CVV or CVC, normally represented in metrical phonology by (*), could function as a foot in the metrical scansion of a word alongside a syllabic foot.[99] The metrical parsing of תִּסְפְּר֥וּ [tʰis.pʰa.ˈʀ̟uː] would, therefore, be [(*), (. *)].

The CVC syllable with a vowel [tʰis], which constitutes an independent foot, would be metrically stronger than the first syllable of the foot (. *), which is represented by a *shewa* sign. This

[99] For the typology of feet in iambic metrical systems see Hayes (1985; 1995), Kager (1993, 383; 2007, 200–201).

would conform to the medieval descriptions cited above, which state that a vowel has the feature of ‘slowness and steadiness’ whereas a *shewa* ‘moves quickly forwards’. The CVC syllable [tʰis] would, however, be lesser in prominence than the final CVV syllable with the main stress [ˈʀ̟uː]. These differences in prominence can be represented by a metrical grid.[100] In the grid the relative prominences are marked by differences in heights of columns of index marks:

Level 3			x
Level 2	x		x
Level 1	x	x	x
	(*)	(.	ˈ*)
	(tʰis)	(pʰa.	ˈʀ̟uː)

As can be seen, the syllable with the main stress is the most prominent. This stress occurs on the strong syllable of the (. *) foot.

The foot is of relevance for some phonological processes in the Tiberian pronunciation tradition, such as the conditioning of the allophones of *resh* (§I.1.20.) and the retraction of stress (§I.2.6.). This is a key justification for the reality of such metrical constituents (Nespor and Vogel 2012).

[100] For hierarchical arrangement of linguistic rhythm on a grid see, for example, Liberman and Prince (1977), Hayes (1995, 26–31) and Halle and Vergnaud (1987). In a study of the metrical phonology of Tiberian Hebrew, Hovav (1984, 87–211) argues for the need to combine foot structures with grids.

As remarked, the phonetic realization of a word such as קול [ˈqo̟ː.ol] should be parsed metrically as a single trochaic foot consisting of a strong syllable and a weak epenthetic syllable, which can be represented (* .). The weak syllable [ol] is bimoraic, so, in terms of its morae should be classified as heavy. It is somewhat unusual for a moraically heavy syllable to be the weak syllable of a binary foot (Kager 2007), but it is preferable to consider it as belonging together with the preceding syllable in the same foot constituent. The epenthetic syllable [VC] is weak and never stressed. Moreover, there is evidence from the distribution of the allophones of *resh* (§I.1.20.) and the pattern of the retraction of accents (§I.2.6.) for the parsing of two heavy syllables together as a single trochaic foot (* .). As for the occurrence of a trochaic foot in the foot inventory of Tiberian Hebrew together with the iambic foot (. *), it should be noted that the moraic foot consisting of CVV or CVC, which is a very frequent foot, is, in fact, best analysed as trochaic, although by convention it is normally represented (*). This is because the main prominence is on the first vowel mora, which is the most sonorous segment of the syllable, i.e. CV́V, CV́C (Kager 1993). A word-final syllabic sequence such as [ˈqo̟ːol] can be preceded by a vocalic *shewa*, e.g. בְּקוֹל 'with a voice', which should be analysed metrically as an amphibrach (. * .).

I.2.5.3. Phonological Principles

In the vast majority of cases, vocalic *shewa* and *ḥaṭef* vowels can be regarded as having the synchronic status of epenthetic vowels. Very often, vocalic *shewas* in the Tiberian reading tradition occur

where historically there were originally lexical vowels. These vowels were of different qualities, e.g.

יִכְתְּב֫וּ [yiχtʰaˈvuː] 'they (m) write' (< **yaktubū*)

סְפָרִ֫ים [safɔːˈʀ̟iːim] 'books' (< **siparīm*)

דְּבָרִ֫ים [davɔːˈʀ̟iːim] 'words' (< **dabarīm*)

The vocalic *shewa*, however, does not preserve the quality of the historical lexical vowel; rather, the *shewa* is a vowel with a neutralized quality, i.e., the maximally open vowel [a], in some circumstances modified by assimilation to its phonetic environment. As remarked, before a guttural, it was realized as a short vowel with the quality of the vowel on the guttural and before *yod* it was realized as a short vowel with the quality of short *ḥireq* [i]. Shortness and non-rounded vowel quality and also the copying of the quality of an adjacent vowel are characteristic features of epenthetic vowels (Hall 2011, 1581). In examples such as those cited for the reduction of lexical vowels to epenthetic vocalic *shewa*, the motivation for the vowel is no longer lexical but rather phonotactic, in that it breaks illicit clusters of consonants on the phonetic level. Lexical vowels can be reduced to zero in contexts where licit sequences of consonants are the result, e.g.

מַלְכֵ֫י [malχeː] 'kings of' (< **malakē*)

לִשְׁמוּאֵ֫ל [liʃmuːˈʔeːel] 'to Samuel' (< **la-Šamūʾēl*)

According to this analysis of vocalic *shewa*, it would have to be assumed that the original vowel is absent at some underlying level of the phonological derivation of words and an

epenthetic vowel is introduced at the phonetic surface level. A /CC/ cluster at the onset of a syllable in word-initial position is broken by an epenthetic and this can be represented thus:[101]

/mq̟ō.mō/	[ma.q̟oː.ˈmoː]	‘his place’	מְקוֹמ֫וֹ
/yiχ.tvū/	[yiχ.ta.ˈvuː]	‘they write’	יִכְתְּב֫וּ
/sfɔ̄.rī.m/	[sa.fɔː.ˈʀ̟iː.im]	‘books’	סְפָרִ֫ים
/dvɔ̄.rī.m/	[da.vɔː.ˈʀ̟iː.im]	‘words’	דְּבָרִ֫ים

The only exception was the *shewa* in forms of the feminine numeral שְׁתַּיִם / שְׁתֵּי ‘two’ and the first component in שְׁתֵּים עֶשְׂרֵה ‘twelve’, which was silent [ˈʃtaːjim] / [ʃteː] / [ʃteːem]. It is for this reason that in many medieval manuscripts the accent *yetiv* is written on these words, e.g.

L: שְׁ֚תַּיִם (Lev. 23.17)

L, A: שְׁ֚תַּיִם (Ezek. 1.11, 41.24)

The rule of the accent *yetiv* is that it occurs on a vowel that is in the first syllable of a word. If the accent syllable is preceded by another vowel, including vocalic *shewa*, *yetiv* cannot occur but is replaced by *pashṭa*, e.g. בְּזֹאת֙ ‘with this’ (Num. 16.28) (Yeivin 1980, 198–99). According to some sources, the word was pronounced by the Tiberian Masoretes with a prosthetic vowel:

[101] Such underlying representations without the epenthetic vowel are adopted in analyses of Tiberian Hebrew made within the framework of generative phonology and optimality theory, e.g. Prince (1975), Greenstein (1992), Malone (1993), Coetzee (1999), Edzard (2013).

[ʔɛʃˈtʰaːjim],[102] although this vowel is not written in the manuscripts. According to the author of *Hidāyat al-Qāriʾ* old and reliable codices (*al-maṣāḥif al-ʿutuq al-jiyād*) mark *pashṭa* (שְׁתַּ֙יִם֙) rather than *yetiv* (שְׁ֚תַּיִם) on this word,[103] and this is occasionally found in the extant early codices, e.g.

C: שְׁתַּ֙יִם֙ (Ezek. 1.11)

This can be interpreted as reflecting that the word was read with a prosthetic vowel, on account of which the accented vowel was not the first vowel of the word.

An anonymous Masoretic treatise indicates that there was variation in the way the word was read:

> As for שְׁתַּיִם, some people read this word with a mobile *shin* (i.e. a mobile *shewa* on the *shin*) on account of the necessity (of doing so) due to the fact it occurs in initial position and with strengthening of *tav* (i.e. with *dagesh*). Some people do not permit the reading of the *shin* as mobile and add a *hamza* (i.e. glottal stop, *ʾalef*) before pronouncing it, although it is not written, in order to be able to pronounce the *shin* as quiescent (i.e. pronounce the *shewa* on the *shin* as quiescent). This (latter) is our reading.[104]

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[102] Cf. the *Treatise on the Shewa* and the other sources discussed by Levy (1936, 31–33), also *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.5, and an anonymous Masoretic treatise CUL T-S NS 301.21.

[103] Long version, MS II Firkovitch, Evr.-Arab II 418, fols. 21r–21v.

[104] II Firkovitch, Evr.-Arab II 365, fol. 6r: שתים הדה אלכלמה מן אלנאס מן יקראהא בתחריך אלשין לצ̇רורה אלאבתדא ומע תשדיד אלתא ומנהם מן לא יסתג̇יז

The silent *shewa* in שְׁתַּ֫יִם / שְׁתֵּי / שְׁתֵּים could be explained by the analysis of the *shin* as extrasyllabic and not part of the onset of the syllable. Moreover, if the cluster /ʃtʰ/ were considered an onset, this would violate the normal principle of rising sonority of syllable onsets (Ewen and Hulst 2001, 136–41, 147–50; Hoberman 1989):

/ʃ.tʰē/ [ʃ.ˈtʰeː] שְׁתֵּי

By contrast, in the imperative verbal form שְׁתֵ֫ה 'drink (ms)!' (Gen. 24.14) the *shin* and the *tav* form the onset of a syllable and are split by an epenthetic: /ʃθē/ [ʃa.ˈθeː].

The variant reading of שְׁתַּ֫יִם / שְׁתֵּי / שְׁתֵּים with a vocalic *shewa* reported in the aforementioned Masoretic treatise could be regarded as an epenthetic that was introduced late the transmission of the reading tradition after the rule of fricativization of post-vocalic בגדכפת consonants had ceased to operate.[105]

When the preposition מִן 'from' is prefixed to the word שְׁתַּ֫יִם / שְׁתֵּי / שְׁתֵּים עֶשְׂרֵה and the *nun* is assimilated to the *shin*, two processes are attested. In Jud. 16.28. the *shin* is geminated and the *shewa* is read vocalic, resulting in the pronunciation of the *tav* as a fricative:

L, A: נְקַם־אַחַ֛ת מִשְּׁתֵ֥י עֵינַ֖י [miʃʃaˈθeː] 'avenge of one of my eyes' (Jud. 16.28)

תחריך אלשין פיזיד המזה קבל ינטק בהא ולא תכתב ליצל בדלך אלי תסכין אלשין והדה הי קראתנא.

[105] For this phenomenon after guttural consonants see §I.2.5.4. below.

In Jonah 4.11 the *shin* remains ungeminated and the *ḥireq* of the prefixed preposition is lengthened in compensation. The lengthening is indicated by a *gaʿya*:

L: הַרְבֵּה֩ מִֽשְׁתֵּים־עֶשְׂרֵ֨ה רִבּ֜וֹ 'more than twelve myriads' (Jonah 4.11)

The author of the aforementioned anonymous Masoretic treatise states that in the tradition he is familiar with the *shewa* of the *shin* in מִֽשְׁתֵּים is silent. He indicates, however, that some people read the *shewa* here vocalic and maintain the *dagesh* in the *tav*.[106]

In word-internal position, the sequence /CCC/ is in principle syllabified /C.CC/, i.e. the second consonant is syllabified as an onset, and the cluster of the second and third consonants at the onset of the second syllable are split by a vocalic *shewa*, e.g.,

/yiχ.tʰvū/ [yiχ.tʰa.ˈvuː] יִכְתְּבוּ

'They write'

A *shewa* under a geminated letter with *dagesh* within a word was likewise vocalic, e.g.

/ham.mlɔ̄.χī.m/ [ham.ma.lɔː.χiː.im] הַמְּלָכִ֔ים

'The kings' (Gen. 14.17)

I.2.5.4. *Ḥaṭef* Signs on Guttural Consonants

The discussion above concerning the epenthetic vocalic *shewa* has been concerned so far with cases in which it has developed

[106] II Firkovitch, Evr.-Arab. II 365, fol. 21r.

from a historical lexical vowel. Another motivation for an epenthetic vowel was to introduce an ahistorical vowel between two consonants for orthoepic purposes. This applies in particular to the frequent insertion of an epenthetic after a guttural consonant (אהעח) where there was no historical lexical vowel in a sequence where the guttural originally closed a syllable in word-medial position and was in contact with a following consonant. These epenthetics are regularly written with *ḥaṭef* signs in the standard Tiberian tradition. The process can be analysed as involving the following stages.

(i) The historical syllable structure reflects the morphological pattern of the grammatical form in question, e.g. the prefix conjugation verb יַֽעֲל֫וּ ‘they go up’ would have the historical syllable structure *jaʕ.lū, in line with, for example, יִשְׁתּ֫וּ ‘they drink’. This can be regarded also as the underlying phonological syllable structure /jaʕ.lū/.

(ii) A short epenthetic is added after the guttural. This creates a short open phonetic syllable [CV], viz. [ja.ʕa.luː].

(iii) The vowel in the syllable preceding the guttural is lengthened, viz. [jaː.ʕa.luː]. This is likely to have come about due to a metrical constraint on having a sequence of a light CV syllable and a following weak epenthetic syllable.

In such syllabifications involving gutturals in word-medial position the epenthetic copies the quality of the preceding vowel:

/jaʕ.lū/	>	[jaː.ʕa.ˈluː]	יַֽעֲל֫וּ ‘they go up’
/heʕ.lɔ̄/	>	[hɛː.ʕɛ.ˈlɔː]	הֶֽעֱלָ֫ה ‘he brought up’

/tˁoh.rɔ̄/ > [tˁɔː.hɔ.ˈʀ̟ɔː] טָהֳרָ֫ה 'cleansing'

A similar process applies to sequences in which a monoconsonantal preposition is attached to a word beginning with a guttural, e.g.

/beʔ.ðō.m/ > [bɛː.ʔɛ.ˈðoː.om] בֶּאֱד֫וֹם

'in Edom' (Gen. 36.32):

The fact that an underlying short /e/ and short /o/ in forms such as /heʕ.lū/ and /tˁoh.rɔ̄/ surface in the phonetic form with a *segol* and *qameṣ* quality respectively, rather than as *ṣere* and *ḥolem*, suggests that the lengthening was a late rule, both diachronically and synchronically, in the derivation. The derivation can be posited to be as follows:

/heʕ.lū/ > (i) [hɛ.ʕɛ.ˈluː] > (ii) [hɛː.ʕɛ.ˈluː]

/tˁoh.rɔ̄/ > (i) [tˁɔ.hɔ.ˈʀ̟ɔː] > (ii) [tˁɔː.hɔ.ˈʀ̟ɔː]

The short vowel phonemes /e/ and /o/ are normally realized with the quality of [ɛ] and [ɔ] respectively when they are short and [eː] and [oː] when they are lengthened in syllables with the main stress, e.g. לֵ֫ב /lev/ [ˈleː.ev] 'heart', עֹ֫ז /ʕoz/ [ˈʕoː.oz] 'strength' (§I.2.3.2.). In a few sporadic cases the /e/ and /o/ vowels before gutturals are realized as [eː] and [oː], e.g.

הֵֽעֲלָ֫ה (Hab. 1.15 'he has brought up')

הֹֽעֲלָ֫ה (Jud. 6.28 'it was offered up')

Here the epenthetic *ḥaṭef* on the guttural has its default quality of [a], since a *ḥaṭef* does not have the qualities of *ḥolem* or *ṣere*. These forms could be interpreted as reflecting a grammaticalization of the phonetic syllable structure in the environment

of gutturals with a lengthened vowel before the guttural, whereby it is encoded in the underlying phonological form as a long vowel phoneme, viz.

/hē.ʕlū/ [heː.ʕa.ˈluː]

/hō.ʕlɔ̄/ [hoː.ʕa.ˈlɔː]

Manuscripts with Babylonian vocalization exhibits many forms in which stage (ii) posited above for the development of most Tiberian forms (e.g. /heʕ.lū/ > (i) [hɛ.ʕɛ.ˈluː] > (ii) [hɛː.ʕɛ.ˈluː]) does not seem to have taken place, with the result that the vowel before the guttural remained short or was elided. This is reflected in the following pattern of vocalization of guttural consonants (Yeivin 1985, 313). Such a syllabification was allowed because in the Babylonian tradition there was no constraint on the sequence of two weak CV syllables or on clusters of consonants in syllable onsets (Khan 2019):

נׇעֲ֯רה [nʕaˈrɔː] or [naʕaˈrɔː] 'young woman' (1 Kings 1.3 | L [BHS]: נַעֲרָ֣ה)

יעֲ֯מִיד [jʕaˈmiːð] or [jaʕaˈmiːð] 'He will build up' (Prov. 29.4 | L [BHS]: יַעֲמִ֑יד)

In the metrical scansion of medieval Hebrew poetry in Spain, the vowel before a guttural with a *ḥaṭef* vowel is, likewise, treated as a short vowel, e.g. מַעֲשֶׂה is scanned as CVCVCV̄ (Delgado 2020).

The Greek transcriptions in Origen's Hexapla also reflect a pronunciation in which the lengthening of the vowel before the

guttural had not taken place. This is seen in the following examples, in which epsilon reflects a short vowel:[107]

> εετηθ (Ambrosiana palimpsest | L [BHS]: הֶֽעֱטִ֫יתָ Psa. 89.46 'you wrapped')
>
> εελιθ (Ambrosiana palimpsest | L [BHS]: הֶֽעֱלִ֣יתָ Psa. 30.4 'you lifted up')
>
> εεμεδεθ (Ambrosiana palimpsest | L [BHS]: הֶֽעֱמַ֣דְתָּ Psa. 31.9 'you established')

This suggests that the late lengthening of the vowel before the guttural is a feature specific to the careful reading of the Tiberian tradition.

The motivation for the introduction of the epenthetic between a guttural and a following consonant was orthoepic. Gutturals were weak consonants in the reading tradition and efforts were made to ensure that they were not slurred over. Acoustically the epenthesis made the gutturals more perceptible when separated from the following consonant[108] and this facilitated their preservation in the reading.

Although there is a tendency for gutturals to be followed by epenthetic vowels where parallel forms have silent *shewa*, this is not a universal rule. It is sometimes possible to identify additional phonotactic and metrical factors that appear to have conditioned the occurrence of the *ḥaṭef* vowels in certain forms with gutturals in contrast to other forms that have silent *shewa*.

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[107] Data supplied by Ben Kantor.

[108] Cf. Hall (2011, 1577–78), who discusses this function of epenthesis in languages.

As shown by DeCaen (2003) and Alvestad and Edzard (2009), one factor that conditions the occurrence of *ḥaṭef* vowels on gutturals, at least on *ḥet*, is sonority of the following consonant. They have shown that a *ḥaṭef* vowel tends to occur when the following consonant is high in sonority, e.g. in יַחֲרֹ֥ושׁ ‘he ploughs’ (Hos. 10.11), where the consonant is a sonorant rhotic, but exhibits a greater tendency to be omitted when the following consonant is lower in sonority, e.g. יֶחְדַּ֥ל ‘he ceases’ (1 Sam. 9.5). This is motivated by the principle that the optimal contact between two adjacent syllables is where the onset of the second syllable is stronger than the offset (coda) of the preceding syllable (Vennemann 1988, 40), and so the contact with a following weak sonorous onset is eliminated by an intervening *ḥaṭef* vowel.

Variations, however, occur in inflections of the same verb, where the same consonants are involved, e.g. יַחְשֹׁ֔בוּ ‘they consider’ (Isa. 13.17) vs. יַחֲשֹׁבֽוּן ‘they consider’ (Psa. 35.20). In such cases the *ḥaṭef* appears to have been motivated by a metrical factor, namely the disfavouring of a rhythmic clash. This is seen in a metrical grid representation of the two forms. In these grids feet are marked in the first row. It will be assumed that feet after the main stress are extrametrical (marked with angular brackets < >). Evidence for this extrametricality is presented below.

Level 3		x	
Level 2	x	x	x
Level 1	x	x	x
Feet:	(*)	(*)	<*>
	jaħ.	ˈʃoː.	vuː

Level 3				x	
Level 2	x		x	x	
Level 1	x	x	x	x	x
Feet	(*)	(.	*)	(*	.)
	jaː.	ħa	ʃoː.	ˈvuː.	un

The grid representation displays the varying degrees of the relative prominence of syllables. These include epenthetic syllables, syllables containing a vowel without the main accent, and syllables with the main accent (represented as levels 1, 2 and 3 respectively in the grids above). It is likely that the insertion of the syllable with the *ḥaṭef* vowel in the second form was favoured since it created grid euphony by repairing a potential rhythmic clash caused by two syllables of the same prominence before the stress,[109] as shown in the following grid:

Level 3			x	
Level 2	x	x	x	
Level 1	x	x	x	x
Feet	(*)	(*)	(*	.)
	*jaħ.	ʃoː.	ˈvuː.	un

In the standard Tiberian tradition a *shewa* is in principle silent on a guttural when the syllable of the guttural receives the main accent and it is followed by another syllable, e.g.

שָׁמַ֫עְנוּ [ʃɔː.ˈmaː.aʕ.nuː] ‘we heard’ (Deut. 5.24)

[109] A clash is the occurrence of two adjacent metrically strong elements with the same prominence. A lapse is the occurrence of two adjacent metrically weak elements; cf. Prince (1983), Selkirk (1984).

שָׁלַ֫חְתִּי [ʃɔː.ˈlaː.aħ.tʰiː] 'I sent' (Num. 22.37)

If the accent moves forward after the attachment of a suffix in such forms, however, a *ḥaṭef* appears, e.g.

שְׁמַֽעֲנ֫וּהָ [ʃa.maː.ʕa.ˈnuːhɔː] 'we heard it' (Psa. 123.6)

These phenomena can also be explained on metrical grounds if we posit, as remarked above, that syllables after the main accent are extrametrical and unfooted.[110] The word שָׁמַ֫עְנוּ can be represented thus (extrametrical syllables in angular brackets):

ʃɔː. ˈmaː. aʕ. nuː

(*) (* .) < * >

Here, since the syllable following the guttural is extrametrical and unfooted there is no rhythmic motivation for a *ḥaṭef*, which is a weak syllable that is obligatorily footed and metrically bound to a following strong syllable.

The metrical structure of שְׁמַֽעֲנ֫וּהָ is:

ʃa. maː. ʕa. ˈnuː. hɔː

(. *) (. *) < * >

[110] For extrametrical syllables at the right periphery of words see Kager (2007, 204).

Here the accent on the syllable after the guttural licenses the *ḥaṭef* in that it can be footed and bound metrically to this strong footed syllable.[111]

Apparent exceptions to this are cases where a conjunctive accent are retracted by *nesiga* onto a syllable before a *ḥaṭef* vowel, e.g.

מַה־נַּ֣עֲשֶׂה לָּ֔ךְ	(Jonah 1.11, ‘what shall we do to you?’)
רָ֣חֲקָה מֶ֣נִּי	(Job 21.16, ‘it is far from me’)

This could be explained by a hypothesis of rule-ordering, whereby the syllabification and foot structure is fixed on the prosodic word level before the main stress retraction on the prosodic phrase level.

In many cases where a guttural occurs after the main stress in forms with an unstressed suffixed directive *he* particle the guttural does not have a *ḥaṭef*, e.g.

הַשַּׁ֫עְרָה	(Deut. 25.7 ‘to the gate’; contrast שַׁעֲרֵ֫י Neh. 13.19 ‘the gates of’)
לְמַ֫עְלָה	(Exod. 25.20 ‘above’; contrast מַעֲלֵ֤ה Lev. 11.5 ‘it brings up’)
וָמַ֫עְלָה	(Exod. 38.26 ‘and upward’)
מַ֣עְלָה מָ֑עְלָה	(Deut. 28.43 ‘above and higher’)

[111] According to J. McCarthy (1979, 164) the *ḥaṭef* vowel on a guttural is bound prosodically with the preceding syllable rather than the following syllable. The descriptions in the medieval sources and the process described here constitute counterevidence to such an analysis.

הַיַּ֫עְרָה (Josh. 17.15 ‘to the forest’, silent *shewa* also with stressed suffix, e.g. יַעְרָ֫הּ Jer. 46.23 ‘her forest’)

נַ֫חְלָה מִצְרָ֫יִם (Num. 34.5 ‘to the brook of Egypt’)

יָ֫הְצָה (Num. 21.23 ‘to Jahaz’)

There are, however, two exceptions to this, in both cases the stressed vowel is *ḥolem*:

צֹ֫עֲרָה (Gen. 19.23 ‘to Zoar’)

הָאֹ֫הֱלָה (Gen. 18.6 ‘into the tent’)

There is general agreement across the model Standard Tiberian manuscripts regarding the marking of *ḥaṭef* signs on gutturals. The reason a composite *ḥaṭef* sign was written rather than a *shewa* is likely to have been that the Masoretes considered that readers would have had greater difficulty predicting the realization of *shewa* under gutturals than in other contexts. As we have seen, there were differences conditioned by variations in the sonority of the consonant following the guttural. There were also variations within forms of the same root, e.g. in different inflections of verbal forms such as

וַֽיַּחֲבֹ֫שׁ [ˌvaɟ.ɟaː.ḥa.ˈvoː.oʃ] (Gen. 22.3 ‘and he saddled’) — וַיַּחְבְּשׁוּ [vaɟ.ɟaḥ.ba.ˈʃuː] (1 Kings 13.13 ‘and they saddled’)

יַחְשֹׁ֫בוּ [jaħ.ˈʃoː.vuː] (Isa. 13.17 ‘they consider’) — יַחֲשֹׁבֽוּן [jaː.ħa.ʃoː.ˈvuː.un] (Psa. 35.20 ‘they consider’)

There were variations also across different grammatical categories, such as the distinction between the verb יַעְקֹ֫ב ‘he supplants’ (Jer. 9.3) and the proper name יַעֲקֹב.

The quality of the epenthetic vowel on gutturals deviates from the normal rules, which likewise motivated the addition of a vowel sign to the *shewa*. A *shewa* on a guttural, for example, retained the quality of [a] even if it preceded a guttural that was followed by a vowel of a different quality, e.g. יִמְחֲאוּ [jim.ḥa.ʔuː] ‘they clap’ (Psa. 98.8). Moreover, as we have seen, an epenthetic vowel on a guttural became assimilated to the quality of a preceding *segol* or *qameṣ*, e.g. הֶעֱמִ֫יד [hɛː.ʕɛ.ˈmiː.ið] ‘he set up’, הָעֳמַ֫ד [hɔː.ʕɔ.ˈmaː.að] ‘it was set up’.

In some extant manuscripts with Non-standard Tiberian vocalization, simple *shewa* is frequently marked on a guttural where standard Tiberian vocalization has a *ḥaṭef* sign, e.g.

חְנִיתֿ (T-S A11.1, Blapp 2017, 44 | L [BHS]: חֲנִ֣ית Job 39.23 ‘spear’)

יַעְשֹׁ֣ק (T-S A11.1, Blapp 2017, 44 | L [BHS]: יַעֲשֹׁ֣ק Job 40.23 ‘it will oppress’)

אֶעְנֶ֯הֿ (T-S A11.1, Blapp 2017, 43 | L [BHS]: אֶֽעֱנֶ֑ה Job 40.5 ‘I will answer’)

יַֽחְלֹ֑ף (T-S A13.18, Blapp 2017, 124 | L [BHS]: יַחֲלֹ֑ף Psa. 90.5 ‘it passes away’)

This could be regarded as reflecting a more primitive stage of the development of the Tiberian vocalization system, in which the reading of a *shewa* on a guttural was not marked explicitly as vocalic by the addition of a vowel sign next to the *shewa* sign. In the standard Tiberian system a vestige of a more primitive stage of development can be identified in the vocalization of the *qere* of the Tetragrammaton with *shewa* corresponding to the *ḥaṭef*

vowel on the *ʾalef* in the standard vocalization of the words representing the *qere* (יְהוָֹה = אֲדֹנָי, יְהוִֹה = אֱלֹהִים). One can compare this to the continuing use of the early Hebrew script to write the Tetragrammaton in Qumran manuscripts that are otherwise written in square script (Tov 2012, 205).[112]

In L a *ḥaṭef segol* is sporadically written on the Tetragrammaton when the *qere* is אֱלֹהִים. This is marked on the first two cases where it has this reading (Gen. 15.2, 15.8) and thereafter is vocalized with *shewa*:

L: אֲדֹנָ֤י יֱהֹוִה֙ (Gen. 15.2)

L: אֲדֹנָ֣י יֱהֹוִ֔ה (Gen. 15.8)

In some Standard Tiberian manuscripts the Tetragrammaton is vocalized with *ḥaṭef segol* when the *qere* is אֱלֹהִים more regularly than in L, e.g. I Firkovitch Evr. I B 52.

In some Non-Standard Tiberian manuscripts the Tetragrammaton is vocalized with a *ḥaṭef pataḥ* (יֲהוָֹה) when the *qere* is אֲדֹנָי, e.g. II Firkovitch Evr. II B 3. Likewise, in Non-Standard Tiberian manuscripts, *ḥaṭef segol* is written on the Tetragrammaton more frequently than in L when the *qere* is אֱלֹהִים (Blapp 2017, 151).[113]

Conversely, in some Non-Standard Tiberian manuscripts a *ḥaṭef* sign is marked on a guttural where the standard Tiberian tradition has a silent *shewa*, e.g.

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[112] Also in early manuscripts of Greek translations of the Hebrew Bible the Tetragrammaton is written in Hebrew script, in some cases even in the early type of script (Roberts 1951, 173–174).

[113] Some manuscripts with Babylonian vocalization represent the initial vowel of the *qere* on the Tetragrammaton (Yeivin 1985, 912).

Genizah manuscripts

סַחֲרָֽהּ (T-S A12.1, Blapp 2017, 71 | L [BHS]: סַחְרָ֑הּ Prov. 31.18 'her merchandise')

בַּעֲלָֽהּ (T-S A12.1, Blapp 2017, 71 | L [BHS]: בַּעְלָ֑הּ Prov. 31.23 'her husband')

וְנַעֲתָּר֗וֹת (T-S A12.1, Blapp 2017, 71 | L [BHS]: וְ֝נַעְתָּר֗וֹת Prov. 27.6 'and excessive')

אֱהֱיֶ֗ה (T-S A12.1, Blapp 2017, 74 | L [BHS]: אֱהְיֶ֗ה Ruth 2.13 'I will be')

תִשְׂבַּעֲנָה֮ (T-S A12.1, Blapp 2017, 71 | L [BHS]: תִשְׂבַּ֑עְנָה Prov. 27.20 'will [not] be satisfied')

European manuscripts

שָׁמָ֫עֲנוּ (Codex Reuchlinianus, Morag 1959, 224 | L [BHS]: שָׁמַ֫עְנוּ Josh. 1.17 'we heard')

מַאֲפֵּלְיָ֑הּ (Codex Reuchlinianus, Morag 1959, 224 | L [BHS]: מַאְפֵּלְיָ֑ה Jer. 2.31 'darkness')

מַֽעֲיָנִים (BL Add MS 21161, fol. 160v | L [BHS]: מַֽעְיָנִים Psa. 104.10 'springs')

The occurrence of a *dagesh* in the בגדכפת letter after the *ḥaṭef* in forms such as וְנַעֲתָּר֗וֹת and מַאֲפֵּלְיָ֑הּ indicates that the guttural must originally have been vowelless and the epenthetic *ḥaṭef* vowel was inserted at a late period after the rule of fricativization of בגדכפת consonants following vowels had ceased to operate. The same applies to the occurrence of the Non-Standard

Tiberian *dagesh* in the *nun* of שָׁמְעֵנּוּ, which would normally occur only after a vowelless letter (§I.3.3.).

In manuscripts with Babylonian vocalization, there are several attested cases of the phenomenon of late insertion of an epenthetic and preservation of a plosive בגדכפת in word-internal position marked by *dagesh* (a miniature *gimel* over the letter) (Yeivin 1985, 342), e.g.[114]

העתיקו [hiʕiˈtʰiːquː] 'they moved away' (L [BHS]: הֶעְתִּיקוּ Job 32.15)

מעגלתיו [mʕagloːˈθɔːw] (L [BHS]: מַעְגְּלֹתָיו Prov. 5.21 'his paths')

ארבעתם [ʔarbaʕaˈtʰɔːm] (L [BHS]: אַרְבַּעְתָּם Dan 1.17 'the four of them')

I.2.5.5. *Ḥaṭef* Signs on Non-Guttural Consonants

Ḥaṭef signs are occasionally marked on non-guttural consonants in the Standard Tiberian vocalization. Many of these are epenthetic vowels, which had the purpose of disambiguating the reading of a *shewa* under a non-guttural consonant, i.e. to indicate explicitly that it was vocalic and to indicate its quality. This was an orthoepic measure to ensure correct reading. The model manuscripts differ as to the number and distribution of *ḥaṭef* signs on non-guttural consonants, and the Masoretic treatises refer to differences in this regard among the Tiberian Masoretes. The existence of these differences can be interpreted as indicating that *ḥaṭef* signs on non-guttural consonants emerged

[114] Data supplied by Shai Heijmans.

at a later stage in the development of the Tiberian vocalization system than *ḥaṭef* signs on guttural consonants.

The main difference in the marking of *ḥaṭef* signs on non-guttural consonants is the extent to which the vocalic *shewa* with its default pronunciation of [a] was replaced by a *ḥaṭef pataḥ* sign. The Aleppo Codex (A) exhibits a particularly advanced tendency to mark *ḥaṭef pataḥ* in such contexts, and there are many examples where A has *ḥaṭef pataḥ* but L and other manuscripts have simple *shewa*, e.g.

A: הֲֽמְֽרַצֵּ֤חַ (L [BHS]: הֲֽמְרַצֵּ֤חַ 2 Kings 6.32 ‘the murderer’)

A: לַֽמֲמִתִֽים (L [BHS]: לַֽמְמִתִֽים Job 33.22 ‘to those who bring death’)

A: בַּֽמֲצִלְתַּ֖יִם (L [BHS]: בַּֽמְצִלְתַּ֖יִם 1 Chron. 16.5 ‘with the cymbals’)

A: הֲֽנַקַלָּ֤ה (L [BHS]: הֲֽנְקַלָּ֤ה בְעֵֽינֵיכֶם֙ 1 Sam. 18.23 ‘does it seem to you a little thing?’)

A: וּֽשֲׁלַ֖ח (L [BHS]: וּֽשְׁלַ֖ח 2 Kings 9.17 ‘and send’)

A: הֲתִֽמֲלֹ֔ךְ (L [BHS]: הֲתִֽמְלֹ֔ךְ Jer. 22.15 ‘are you a king?’)

A: לָֽקֲק֤וּ (L [BHS]: לָֽקְק֤וּ 1 Kings 21.19 ‘they licked’)

The manuscript L marks *ḥaṭef pataḥ* in place of vocalic *shewa* in a number of cases, e.g.

L: וְהִתְבָּֽרֲכ֣וּ (Gen. 22.18 ‘they shall bless themselves’)

L, A: רֻֽטֲפַ֣שׁ (Job 33.25 ‘his flesh became fresh’)

L, A: וּֽשֲׁבֵ֥ה (Jud. 5.12 ‘and take captive!’)

In some model manuscripts, however, *ḥaṭef pataḥ* never occurs on non-gutturals, e.g. MS Sassoon 507 (S) (Shashar 1983, 20).

The Masorete Pinḥas Rosh ha-Yeshiva is reported in the *Diqduqe ha-Ṭeʿamim* to have added a *pataḥ* sign to many instances of vocalic *shewa* under non-guttural consonants, some of which have simple *shewa* in L (ed. Dotan 1967, §20), e.g.

סֹכֲכִ֣ים (Exod. 25.20 'covering' | L [BHS]: סֹכְכִ֣ים)

הִֽתְפּוֹרֲרָה֙ (Isa. 24.19 'it has been rent asunder' | L [BHS]: הִֽתְפּוֹרְרָה֙)

קֲשִׁי֙ (Deut. 9.27 'stubbornness' | L [BHS]: קְשִׁי֙)

There are also differences in the manuscripts and among the Masoretic authorities with regard to the replacement of a vocalic *shewa* by a *ḥaṭef* sign on a non-guttural consonant before a guttural consonant with the purpose of indicating the quality of the *shewa*. This is referred to in *Diqduqe ha-Ṭeʿamim,* which states that there was no consistency among the Tiberian Masoretes in the marking of *ḥaṭef qameṣ* in words such as (ed. Dotan 1967, §19):

וַֽנִּפְתֳּחָה֙ (L [BHS]: וַֽנִּפְתְּחָה֙ Gen. 43.21 'and we opened')

שִׁ֥מֳעָ֑ה (L [BHS]: שִׁ֥מְעָ֑ה Psa. 39.13 'hear')

וְנִקְרֳאָ֤ה (L [BHS]: וְנִקְרְאָ֤ה Zech. 8.3 'and it will be called')

This was a measure to ensure that the *shewa* was read with the quality of the *qameṣ* after the guttural rather than its default

pronunciation with the quality of *pataḥ*.[115] Here L generally exhibits the more conservative practice of leaving the words with simple *shewa* with the expectation that the reader would know the correct pronunciation. There are, however, some cases of *ḥaṭef qameṣ* in this context in L, e.g.

שִׂמֳּחֲהוּ (Jer. 20.15 'he made him happy')

The Aleppo Codex exhibits a greater tendency to use a *ḥaṭef* sign in these circumstances (Yeivin, 1968, 35), e.g.

A: הַקֳּהָתִ֑י (L [BHS]: הַקְּהָתִ֑י Josh. 21.4 'the Kohathite')

As we have seen, A even uses an innovative *ḥaṭef ḥireq*. The purpose of this was to mark explicitly that a *shewa* was vocalic and that, since it was followed by a guttural with a *ḥireq*, the *shewa* was to be read with the quality of *ḥireq* (Yeivin 1968, 21), e.g.

הִֽתְֱעִ֥יבוּ [hiː.θi.ˈʕiː.vuː] (L [BHS]: הִֽתְעִ֥יבוּ Psa. 14.1 'they have done abominable deeds')

Some Non-Standard Tiberian manuscripts use the simple vowel sign *ḥireq* in place of the *shewa* sign where the *shewa* has the pronunciation of short [i] before a guttural with *ḥireq*, e.g.

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[115] Compare the remarks of David Qimḥi (*Sefer Mikhlol*, ed. Rittenberg, 1862, 138b): וכן על קמץ חטף כמו ומגעָר בך קריאת הגימל נוטה לקמץ חטף מפני הע״ן ויש ספרים מדויקים שהגימל נקודה בקמץ חטף 'Likewise with *ḥaṭef qameṣ*, as in וּמִגְּעָר־בָּֽךְ "and from rebuking you" (Isa. 54.9), the reading of the [vowel on] the *gimel* is similar to *ḥaṭef qameṣ* on account of the *ʿayin*. There are accurately vocalized codices in which the *gimel* is vocalized with *ḥaṭef qameṣ*.'

וִאֱ֗יש (T-S A12.1, Blapp 2017, 75 | L [BHS]: וְאִ֣יש Prov. 29.13 ‘and a man’)

In Non-Standard Tiberian manuscripts *shewa* before *yod*, which is pronounced as [i], is frequently replaced by *ḥireq*, e.g. Genizah manuscripts

וִֽיָדֶ֗יהָ֒ (T-S A12.1, Blapp 2017, 75 | L [BHS]: וְֽיָדֶ֗יהָ Prov. 31.20 ‘and her hands’)

מִיַּחֵ֗ל (T-S A13.20, Blapp 2017, 151 | L [BHS]: מְ֝יַחֵ֗ל Psa. 69.4 ‘waiting’)

European manuscripts

יְיָסְדֶ֫נָּה֮ (Codex Reuchlinianus, Morag 1959, 234 | L [BHS]: יְיַסְּדֶ֫נָּה Josh. 6.26 ‘he will found it’)

יְיֵלִ֔יל (Codex Reuchlinianus, Morag 1959, 234 | L [BHS]: יְיֵלִ֔יל Isa. 15.2 ‘wails’)

I.2.5.6. Silent *Shewa* after a Long Vowel

When *shewa* occurred within a word after a long vowel, it was as a general rule silent,[116] e.g.

יֵֽשְׁב֖וּ [jeːeʃˈvuː] (Gen. 47.6 ‘let them dwell)

יָֽדְךָ֖ [jɔːɔðˈχɔː] (Gen. 49.8 ‘your hand’)

שָֽׁמְר֥וּ [ʃɔːɔmˈʀ̟uː] (Jud. 2.22 ‘they guarded’)

שֹֽׁמְרֵ֥י [ʃoːomˈʀ̟eː] (2 Kings 25.18 ‘the guards of’)

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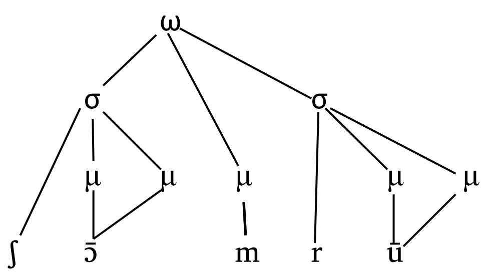
[116] The evidence for this in the various medieval sources is discussed in Khan (1987, 54–55).

As can be seen in the transcriptions above, we should assume that an epenthetic vowel of the same quality of long vowel occurred before the consonant with the silent *shewa* after the long vowel. The presence of the epenthetic in such word-medial syllables is demonstrated by the fact that the first syllable can take a secondary stress in the form of a conjunctive accent, e.g.

כְּעֹטְיָה [kʰoˌʕoːotˁˈjɔː] 'like one wrapped' (Cant. 1.7)

A secondary stress cannot clash with the main stress but must, in principle, be separated from it by intervening syllable on the phonetic level.

This phenomenon may be compared to the insertion of an epenthetic after a long vowel in a closed syllable at the end of a word, e.g. קוֹל [q̟oː.ol] 'voice' (§I.2.4.). The underlying syllable structure of words such as שָׁמְרוּ [ʃɔː.ɔm.ˈʀ̟uː] could, therefore, be represented /ʃɔ̄.m.rū/, with a stray extrasyllabic consonant, just as it has been proposed to posit the existence of an extrasyllabic consonant in word-final position, viz. /q̟ō.l/. Following the analysis by Kiparsky (2003) of Arabic syllable structure, we may say that such unsyllabified consonants, which he terms 'semisyllables', are licensed by moras adjoined to the higher node of the prosodic word rather than the syllable node:



/ʃɔ̄.m.rū/ [ʃɔː.ɔm.ʀ̟uː] 'they guarded'

On the phonetic level the extrasyllabic consonant was syllabified by means of an epenthetic. There was a constraint against word-final short epenthetic vowels in open syllables [CV], since such syllables had to be combined in an iambic foot with a following bimoraic syllable, i.e. a syllabification such as [q̟oː.la] or [ʀ̟oː.ʕa] was not licit. So the epenthetic came before the consonant, forming a closed syllable [VC]: [ˈq̟oː.ol], which constituted a trochaic foot (* .) metrically. In principle, the word-internal consonants in a sequence such /CV̄CCV̄/, as in שָׁמְרוּ, could have been syllabified /CV̄.CCV̄/ with an epenthetic breaking the cluster in the onset of the second syllable /CCV̄/ on the phonetic level, thus [(CVː).(CV.CVː)], with the feet indicated by the round brackets. This is because a short open syllable [CV] is licit in this position. Such a syllabification, indeed, occurs in some words (see below). The normal syllabification of word-internal sequences such as /CV̄CCV̄/ and /CV̄CCVC/ as /CV̄.C.CV̄/ and /CV̄.C.CVC/ rather than /CV̄.CCV̄/ and /CV̄.CCVC/ is likely to have developed by analogy with the obligatory syllabification /CV̄.C/ in word-final position.

The metrical parsing of a form such as [ʃɔː.ɔm.ˈʀ̟uː] would be [(* .) ˈ(*)], i.e. [(ʃɔː.ɔm).(ˈʀ̟uː)]. As remarked already, the second syllable in the trochaic foot (* .) is heavy since it is bimoraic, but it would have been of relatively low prominence. The relative differences in prominence can be reconstructed on a metrical grid as follows:[117]

[117] J. McCarthy (1979, 157) also proposed that such word-internal syllables were feet containing ‘two rhyme nodes’, though he did not identify an epenthetic in his framework of analysis.

Level 3			x
Level 2	x		x
Level 1	x	x	x
Feet	(*	.)	(*)
	ʃɔː.	ɔm.	ˈʀ̟uː

I.2.5.7. Vocalic *Shewa* after a Long Vowel

I.2.5.7.1. On Guttural Consonants

In certain cases, a *shewa* after a long vowel in word-internal position was pronounced vocalic. This applies to all cases where the consonant after the long vowel is a guttural. In such cases, as is the rule with gutturals, the vocalic reading is explicitly indicated by *ḥaṭef* signs, e.g.

כֹּהֲנִים [kʰoːhaˈniːim] ‘priests’

צֹעֲקִים [sˤoːʕaˈq̟iːim] (Gen. 4.10 ‘crying out’)

לֹחֲצִים [loːħaˈsˤiːim] (Exod. 3.9 ‘pressing’)

כֹּאֲבִים [kʰoːʔaˈviːim] (Gen. 34.25 ‘being in pain’)

Hypothetically it could have been possible for a type of furtive *pataḥ* vowel to have been inserted before the guttural, i.e. [loːwaħˈsˤiːim], by analogy with gutturals in word-final position, as in, for example, [moːwaħ] מֹחַ ‘marrow’. The insertion of the epenthetic after the guttural had an orthoepic motivation. It was a more optimal position to make the guttural maximally perceptible before the following consonant. This also put the guttural in the onset of a syllable, which is a stronger position than the syllable coda and thus more optimal from an orthoepic point of

view. The placement of the epenthetic before the guttural in word-final position, i.e. furtive *pataḥ*, is due to the fact that the constraint on word-final, unfooted CV syllables outranked the orthoepic principle of putting the guttural in onset position. The Babylonian reading tradition did not have such a constraint on word-final CV syllables and placed furtive *pataḥ* after a guttural in word-final position. This is attested where the final consonant is *ʿayin* (Yeivin 1985, 327–28), e.g.[118]

יגׄיעׄ [jagˈgiːʕa] (L [BHS]: יַגִּ֖יעַ Isa. 8.8 'it will reach')

מדׄועׄ [madˈduːʕa] (L [BHS]: מַדּ֖וּעַ Jer. 2.14 'why?')

I.2.5.7.2. On Non-Guttural Consonants

The Masoretic sources list a number of cases where the *shewa* on non-guttural consonants after a long vowel is vocalic rather than silent according to the general rule. The early Tiberian Masoretic manuscripts vocalize many of these cases with *ḥaṭef pataḥ* to indicate that the *shewa* should be read as vocalic (§I.2.5.1.). As remarked above, some manuscripts vocalize in this way more frequently than others and it is particularly common in A.

I.2.5.7.3. Long Vowel before Two Identical Consonants

One notable case is a *shewa* under the first of a pair of identical consonants, which was vocalic if the preceding vowel was long, e.g.

L: לָקְק֣וּ [lɔːq̟aˈq̟uː] 'they licked' (A: לָֽקֲק֣וּ, 1 Kings 21.19)

[118] Data supplied by Shai Heijmans.

L: סָבְב֥וּ [sɔːvaˈvuː] 'they surrounded' (A: סָבֲב֥וּ , Josh. 6.15)

L: שׁ֨וֹטְט֜וּ [ʃoːtˤɑˈtˤuː] 'run to and fro!' (A: שׁ֨וֹטֲט֜וּ, Jer. 5.1)

L: עֹלְל֣וֹת [ʕoːlaˈloːoθ] 'gleanings' (A: עֹלֲל֣וֹת, Jud. 8.2)

L: חֹקְקִ֥י [ħoːqaˈqiː] 'one who carves' (A: חֹקֲקִ֥י, Isa. 22.16)

L: בְּתוֹכְכֶ֖ם [baθoːχaˈχɛːɛm] 'in your presence' (Gen. 23.9)

L: הֹלִֽיכְךָ֞ [hoːliːχaˈχɔː] 'he caused you to go' (Deut. 8.2)

The insertion of the epenthetic between the consonants was most likely favoured since it made the two identical consonants more perceptible and so ensured that they were not slurred together and contracted in the reading. The vocalic *shewa*, therefore, here has an orthoepic motivation. In a CV̄CC sequence one repair strategy of the overlong syllable CV̄C would have been to elide the consonant in the coda. This would have been easier where there was a sequence of two identical lexical consonants.

If the preceding vowel was short, the *shewa* was silent.[119] This was due to the fact that the syllable CVC with a short vowel was bimoraic and not subject to any change to optimalize its weight, e.g.

L: הִנְנִ֗י [hinˈniː] 'behold me' (Gen. 6.17)

[119] *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, §5), Saadya, *Kutub al-Lugha* (ed. Dotan 1997, 466–67). *Treatise on the Shewa* (ed. Levy 1936, טז-יז).

L, A: הַרְרֵי־קֶ֫דֶם [haʀ̟ʀ̟eː] ‘the mountains of old’ (Deut. 33.15)

L, A: רִבְב֣וֹת אֶפְרַ֫יִם [ʀ̟ivˈvoːoθ] ‘the ten thousands of Efraim’ (Deut. 33.17)

L, A: חִקְקֵי־אָ֫וֶן [ħiqqeː] ‘decrees of iniquity’ (Isa. 10.1)

L, A: יִלְלָתָ֫הּ [jillɔːˈθɔːɔh] ‘its wailing’ (Isa. 15.8)

L: וְשָׁדְד֖וּ [vaʃɔðˈðuː] ‘and devastate!’ (A: וְשֳׁדְד֖וּ, Jer. 49.28)

Note that in the last example, A indicates the shortness of the vowel in the closed syllable by *ḥaṭef qameṣ* sign.

In six words, however, *shewa* on the second of two identical letters after a long vowel is silent, in all of which the long vowel has the main stress. These are the following:[120]

L, A: יִמְצָאֻ֫נְנִי [jimsˤɔːˈʔuːunniː] ‘they (m) will find me’ (Prov. 8.17)

L, A: יְשַׁחֲרֻ֫נְנִי [jaʃaːħaˈrˤuːunniː] ‘they seek me’ (Hos. 5.15)

L, A: יְכַבְּדָ֫נְנִי [ja·χabbaˈðɔːɔnniː] ‘he honours me’ (Psa. 50.23)

L, A: יִקְרָאֻ֫נְנִי ... יְשַׁחֲרֻ֫נְנִי וְלֹ֣א יִמְצָאֻ֫נְנִי [jiqʀ̟ɔːˈʔuːunniː … jaʃaːħaˈrˤuːunniː vaˈloː jimsˤɔːˈʔuːunniː] ‘they call me … they seek me but do not find me’ (Prov. 1.28).

This can be explained on metrical grounds in the same way as the difference between שְׁמַעֲנֻ֫וּהָ and שָׁמַ֫עְנוּ (§I.2.5.4.) The occurrence of vocalic *shewa* after the main accent in יִמְצָאֻ֫נְנִי is not optimal since the final syllable after the accent is extrametrical and unfooted and a vocalic *shewa* is a weak syllable that is obligatorily footed and metrically bound to a following strong syllable.

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[120] *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, §5), the *Treatise on the Shewa* (ed. Levy, 1936, טז).

When the accent on a word is retracted by *nesiga* onto a long vowel before two identical consonants, A marks the *shewa* on the first consonant as vocalic by *ḥaṭef pataḥ* in virtually all cases, e.g.

L: בָּ֥זְזוּ בַ֑ז [ˈbɔːzazuː ˈbaːaz] ‘they took plunder’ (A: בָּ֥זֲזוּ, Isa. 33.23)

L: נֹ֥סְסָה ב֑וֹ [ˈnoːsasɔː ˈvoː] ‘it drove it on’ (A: נֹ֥סֲסָה, Isa. 59.19)

L: וִ֖יסֹ֣ובְבוּ עִ֑יר [viːˈsoːvavuː ˈʕiːiʀ̟] ‘and they go around the city’ (A: וִ֖יסֹ֣ובֲבוּ, Psa. 59.7)

L: יְחֹ֥קְקוּ צֶ֑דֶק [joˈħoːq̟aq̟uː ˈsˤɛːðɛq̟] ‘they decree what is just’ (A: יְחֹ֥קֲקוּ, Prov. 8.15)

In one case that is extant in A, however, a *shewa* is written rather than a *ḥaṭef pataḥ*. The consonant following the retracted accent here is the sonorant *nun*:

L: תִּתְבֹּ֥ונְנוּ בָ֖הּ ‘you will understand it’ (A: תִּתְבֹּ֥ונְנוּ, Jer. 23.20)

It is clear from the vocalization in A of the majority of examples that the retraction of the accent did not cause the *shewa* to become silent.[121] As noted above (§I.2.5.4.), in the sequence of rules of derivation, the retraction of an accent appears to have taken place after the syllable structure had been established. With regard to תִּתְבֹּ֥ונְנוּ (Jer. 23.20), in which A has a simple *shewa* sign, it is likely that here too the *shewa* was read as vocalic, since the *Treatise on the Shewa* states that the *shewa* on the first of two

[121] This is contrary to the claim of Dotan in his notes to his edition of *Diqduqe ha-Ṭeʿamim* (1967, vol. 2, 192) that the *shewa* was silent in all these cases.

identical letters after the vowel *ḥolem* was read in all cases without exception as vocalic (ed. Levy 1936, טז-יז).

I.2.5.7.4. Long Vowel in a Prefixed Particle before Resh

According to the *Treatise on the Shewa* published by Levy (1936), if *resh* with *shewa* is the first letter of a noun and is preceded by a prefixed grammatical particle that is vocalized with *qameṣ* or *ṣere*, the *shewa* was pronounced vocalic. The relevant passage is as follows (Levy 1936, יז-יח):

> Rule concerning the *resh* that causes *shewa* to be vocalic: Whenever *resh* has *shewa* under it and is the second letter of the word, the *shewa* is always pronounced like *pataḥ*, as in הָֽרְפָאִ֥ים יְחוֹלָ֑לוּ (Job 26.5 'the shades tremble'), and as in הָֽרְשָׁעִ֑ים (Psa. 1.4, etc. 'the wicked'), מֵֽרְכ֥וּשׁ (2 Chron. 35.7 'from the possession of'), בָּֽרְכ֖וּשׁ (Ezra 1.6 'with goods'), בָֽרְח֖וֹב (Gen. 19.2, etc. 'in the street'), בָּֽרְחֹב֑וֹת (Prov. 7.12, etc. 'in the streets'), בָּֽרְמָחִ֑ים (Neh. 4.15 '[held] onto the spears'), וְהָֽרְמָחִ֖ים (Neh. 4.10 'and the spears'), and other cases. Know that this rule applies only when it [i.e. *resh*] is preceded by *qameṣ* or *ṣere* [lit. two dots]. If it occurs without these two signs (preceding it), it is never pronounced like *pataḥ*, as in יֹֽרְדִ֔ים (Jud. 9.37 'coming down'), מֹרְדִ֖ים (Neh. 2.19 'rebelling'), בִּרְח֖וֹב (Ezra 10.9, etc. 'in the open square of'), כִּרְצ֥וֹן (Esther 1.8 'according to the will of'), לִרְצוֹן 'for the will of' (cf. לִרְצֹנ֖וֹ Lev. 1.3), מִרְדֹ֜ף (1 Sam. 23.28, etc. 'from pursuing'), תִּרְדֹּ֑ף (Deut. 16.20, etc. 'you shall pursue'). The whole of Scripture follows this rule. The words that I have just shown you, under which

> the *shewa* is vocalic, are only nouns. Do not mix these with verbs and fall into error.[122]

The intention of the statement that the *shewa* is pronounced as *pataḥ* (*yuftaḥ*) is that the *shewa* was pronounced vocalic. This was the default pronunciation of vocalic *shewa* and was the pronunciation of most of the cases cited, e.g. הָֽרְשָׁעִ֑ים [hɔːʀ̟ɑʃɔːˈʕiːim], מֵֽרְכ֑וּשׁ [meːʀ̟ɑˈχuːuʃ]. In some of the cases cited in the *Treatise on the Shewa*, however, the vocalic *shewa* occurs before a guttural and so one would expect that it would have had the quality of the vowel after the guttural, e.g. בָּֽרְח֫וֹב [vɔːʀ̟oˈħoːov]. In some cases in the early manuscripts, the quality of the vocalic *shewa* before the guttural is made explicitly by a *ḥaṭef* sign, e.g. בָּֽרֳהָטִ֑ים [bɔːʀ̟ɔhɔːˈtˤiːim] (L [BHS] Gen. 30.38 'in the troughs').

The reading of the *shewa* as vocalic in these forms appears to have had a morphological motivation. It was a strategy to keep the morpheme boundary perceptually distinct, aligning the prosody with the morphology by creating a foot boundary between the grammatical affix and the stem of the word:

hɔː.   ʀ̟ɑ.   ʃɔː.   ˈʕiː.   im

(*)   (.   *)   (*   .)

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[122] שרט אלריש אלד̇י יחרך אלשוא: כל ריש תחתה שוא פאלחרף אלת̇אני מן אלכלמה̈ יפתח אלשוא לעולם מת̇ל הָֽרְפָאִים יחוללו הָֽרְשָׁעִים ומת̇ל מֵֽרְכוּשׁ בָֽרְכוּשׁ בָּֽרְחוֹב בָּֽרְחוֹבוֹת̈ בָּֽרְמָחִים והרמחים וג̇ירהמא. ואעלם אן שרטהא אן יכון קבלהא קמץ או שתי נקודות פקט. ואמא אן כאן בג̇יר הד̇ין אלסימנין פלא יפתח אבדא מת̇ל יוֹרְדִים מוֹרְדִים ברחוב כִּרְצוֹן לִרְצוֹן מִרְדּוֹף תִּרְדּוֹף. עלי הד̇א אלשרט כל אלמקרא והד̇א אלכלאם אלד̇י אורינאך מן קבלה אן אלשוא יתחרך תחתה הוא אסמא פקט פלא תכ̇לט מעה אלאפעאל פתכ̇טי.

In the same phonological conditions, i.e. *resh* preceded by long *qameṣ* or *ṣere*, in other contexts the *shewa* was generally silent and the *resh* footed with the preceding syllable, e.g. in the following verbal forms (feet indicated by round brackets):

יָרְד֥וּ [(jɔː.ɔʀ̟).(ˈðuː)] 'they went down' (Exod. 15.5)

יֵרְד֣וּ [(jeː.eʀ̟).(ˈðuː)] 'they (m) will come down' (1 Sam. 13.12)

יֹרְדִ֖ים [(joː.oʀ̟).ˈ(ðiː.im)] 'coming down (mpl)' (Jud. 9.37)

The statement at the end of the passage from the *Treatise on the Shewa* implies that the reading of the *shewa* as vocalic after a prefixed grammatical particle only applied to nouns, suggesting that in forms such as מֵרְאֹ֑ת (Isa. 21.3 'from seeing'), מֵרְע֣וֹת (Ezek. 34.10 'from feeding'), מֵרְדָ֣ה (Gen. 46.3 'from going down') the *shewa* would be silent, viz. [meːeʀ̟ˈʔoːoθ], [meːeʀ̟ˈʕoːoθ], [meːeʀ̟ˈðɔː]. In the Hebrew Masoretic treatise §11 in Baer and Strack's (1879) corpus, however, it is stated that the *shewa* in מֵרְאֹ֑ת (Isa. 21.3) and מֵרְע֣וֹת (Ezek. 34.10) is read vocalic.

The strategy of reading the *shewa* as vocalic to mark the morpheme boundary only applied to cases where the particle had a vowel phoneme with inherent length, i.e. long *qameṣ* /ɔ̄/ or long *ṣere* /ē/. In such cases, the reading of an epenthetic after the *resh* would be achieved by syllabifying the *resh* in the onset of the initial syllable of the noun, e.g. מֵרְכ֔וּשׁ /mē.rχū.ʃ/ [meː.ʀ̟ɑ.ˈχuː.uʃ]. When the particle had a short vowel phoneme, e.g. בִּרְחוֹב, the syllabification of the *resh* in the onset would require compensatory lengthening by the replication of the short pho-

neme to fill the slot of the *resh*, i.e. /bir.ħō.v/ > /bii.rħō.v/. Evidently, there was a constraint against this additional adjustment of the syllable structure.

The *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §20) includes some cases of constructions consisting of a prefixed particle with *qameṣ* or *ṣere* before *resh* as examples of the practice of the Masorete Pinḥas Rosh ha-Yeshiva to use *ḥatef pataḥ* to indicate that a *shewa* on a non-guttural consonant was vocalic, viz.

מֵֽרֲפִידִים 'from Rephidim' (L [BHS]: מֵֽרְפִידִים, Exod. 19.2)

הָֽרֲוָחָה 'the respite' (L [BHS]: הָֽרְוָחָה, Exod. 8.11)

הָֽרֲבִיעִי 'the fourth' (L [BHS]: הָֽרְבִיעִי, Gen. 2.14, etc.)

הָֽרֲכוּשׁ 'the property' (L [BHS]: הָרֲכוּשׁ Num. 16.32, הָרְכוּשׁ 1 Chron. 27.31, הָרְכוּשׁ 2 Chron. 21.17)

הָֽרֲשָׁעִים 'the bad ones' (L [BHS]: הָֽרְשָׁעִים, Exod. 9.27, etc.)

With the exception of הָרֲכוּשׁ (Num. 16.32), L vocalizes all cases of *resh* in these constructions with a simple *shewa*. Even in Num. 16.32 the *ḥaṭef pataḥ* is misshapen and the *pataḥ* appears to have been added during a later revision. As one would expect, A marks a *ḥaṭef pataḥ* in many cases to indicate explicitly that the *shewa* was vocalic. The extant examples include:

הָֽרֲבִיעִית 'the fourth' (L [BHS]: הָֽרְבִיעִית, 1 Kings 6.37)

וְהָֽרֲכָסִים 'and the rough places' (L [BHS]: וְהָֽרְכָסִים Isa. 40.4)

וְהָֽרֲשָׁעִים 'and the wicked' (L [BHS]: וְהָֽרְשָׁעִים, Isa. 57.20)

בָּֽרֲשָׁעִים '(do not envy) the wicked' (L [BHS]: בָּֽרְשָׁעִים, Prov. 24.19)

הָרֲשָׁעָה 'the evil (way)' (L [BHS]: הָרְשָׁעָ֣ה, Ezek. 3.18)

לָרֲוָיָה 'to relief' (L [BHS]: לָֽרְוָיָֽה, Psa. 66.12)

הָרֲכ֔וּשׁ 'the property' (L [BHS]: הָרְכ֔וּשׁ, 1 Chron. 27.31)

הָרֲכוּשׁ֙ 'the property' (L [BHS]: הָרְכוּשׁ֙, 2 Chron. 21.17)

מֵרֲכ֥וּשׁ 'from the property of' (L [BHS]: מֵרְכ֥וּשׁ, 2 Chron. 35.7)

It is significant to note, however, that a proportionally larger number of cases of these constructions are vocalized in A with simple *shewa*. Some selected examples include:

הָרְבִיעִ֑י 'the fourth' (Josh. 19.17 + 20 other cases)

בָּֽרְבִיעִי֙ 'on the fourth' (Ezek. 1.1)

הָרְבִיעִ֗ית 'the fourth' (1 Kings 6.1, + 8 other cases)

הָרְשָׁעִ֑ים 'the evil ones' (Zeph. 1.3 + 3 other cases)

לָרְשָׁעִֽים (Isa. 48.22 + 1 other case)

מֵרְשָׁעִ֖ים 'from wicked ones' (1 Sam. 24.14 +5)

These include cases in which a preposition is attached to a verbal infinitive and so, judging by the statement in the *Treatise on the Shewa*, one would expect the *shewa* to be read as silent:

מֵרְא֖וֹת (Isa. 21.3 + five other cases)

מֵרְע֣וֹת (Ezek. 34.10)

It is possible that the use of simple *shewa* in A before many nominal forms is due to inconsistency of the marking of *ḥaṭef pataḥ* on non-guttural consonants. There are also a number of cases in A in which a vocalic *shewa* would have had the quality

of [o] before guttural with *ḥolem*. In such cases, there was no available *ḥaṭef* sign to represent this quality, e.g.

הָֽרְחוֹקִ֔ים 'the distant ones' (Isa. 46.12, 66.19)

וּבָֽרְחֹב֔וֹת 'and in the squares' (Cant. 3.2)

מֵֽרְחֹ֣ב 'from the square of' (2 Sam. 21.12)

Some of the Karaite transcriptions use the Arabic *sukūn* symbol to mark explicitly that a *shewa* is silent. It is significant that examples can be found in the manuscripts of the *sukūn* marked on the transcription of *resh* where, according to the rule in the *Treatise on the Shewa* just described, one would expect the *shewa* to be vocalic, e.g.

وُبارْحوبوث [wuvɔːɔʀ̟ħoːˈvoːoθ] (BL Or 2554 fol. 56v, 9 | L [BHS]: וּבָֽרְחֹב֔וֹת Cant. 3.2 'and in the squares')

This indicates that in some streams of the Tiberian tradition the *shewa* was not consistently pronounced vocalic after a long vowel of a prefixed particle.

I.2.5.7.5. *Shewa* in Inflections of Specific Verbal Roots

A *shewa* on the medial radical of the verbal roots גר"ש 'to drive out', אכ"ל 'to eat', בר"ך 'to bless', יר"ד 'to go down', and הל"ך 'to go' is vocalic after a long vowel in certain circumstances, according to Ben Asher. In some of the cases where Ben Asher read the *shewa* as vocalic, Ben Naftali read it as silent.

In forms with *shewa* on the *resh* following a long vowel from the root בר"ך 'to bless',[123] if the accent is on the *bet*, the *shewa* is silent. This applies to cases where the accent has been retracted by *nesiga*, e.g.

L: וְהִתְבָּ֥רְכוּ ב֖וֹ [vihiθˈbɔːɔʀ̟χuː ˈvoː] 'they will bless themselves in him' (A: וְהִתְבָּֽרְכוּ, Jer. 4.2)

L: וְיִתְבָּ֥רְכוּ ב֑וֹ [vijiθˈbɔːɔʀ̟χuː ˈvoː] 'and may they bless themselves in him' (A: וְיִתְבָּֽרְכוּ, Psa. 72.17)

L: בָּ֥רְכוּ נָ֖א [ˈbɔːɔʀ̟χuː ˈnɔː] 'bless!' (A: בָּֽרְכוּ, 1 Chron. 29.20)

If, however, the accent is on the *kaf*, the *shewa* after a long vowel is vocalic.[124] The manuscript A regularly indicates the vocalic realization by a *ḥaṭef pataḥ* sign and this is frequently the case also in L, e.g.

L: בָּרֲכֵ֥נִי [bɔːʀ̟aˈχeːniː] 'bless (ms) me!' (Gen. 27.34)

L: בָּרֲכ֥וּ יְהוָ֗ה [bɔːʀ̟aˈχuː] 'bless the Lord' (A: בָּֽרֲכ֥וּ, Psa. 103.20)

L: בַּעֲב֖וּר תְּבָרֲכַ֥נִּי נַפְשֶֽׁךָ [tavɔːʀ̟aˈχaːanniː] 'in order that your soul blesses me' (Gen. 27.19)

L: בָּרֲכ֖וּ יְהוָֽה [bɔːʀ̟aˈχuː] 'bless the Lord' (Jud. 5.2)

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[123] For this rule see *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §21), *Treatise on the Shewa* (ed. Levy, 1936, כט-ל).

[124] According to *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, §21) the only exception in the Bible is the Aramaic form בָּרְכֵת 'I blessed' (Daniel 4.31), in which the accent falls on the syllable beginning with the *kaf* but the *shewa* is silent.

The marking of *ḥaṭef pataḥ* is not completely regular in L and, moreover, many cases seem to be corrected from an original simple *shewa* sign. Other manuscripts written by the scribe of L, Samuel ben Jacob, mark the *ḥaṭef pataḥ* more regularly, such as the manuscript known as L17:[125]

L: וּבָרְכ֥וּ [wuvɔːʀ̟aˈχuː] 'and bless' (L17, A וּבָרֲכ֥וּ, 2 Sam. 21.3)

L: לֹ֣א תְבָרְכֶ֔נּוּ [θavɔːʀ̟aˈχɛːɛnnuː] 'do not bless him' (L17, A תְבָרֲכֶ֔נּוּ, 2 Kings 4.29)

The *shewa* was vocalic also when a secondary accent occurred on the syllable beginning with the *bet*. This is the case, for example, in the following form, although it is written with a simple *shewa* in L:[126]

L: מְבָֽרְכֶ֔יךָ [maˌvɔːʀ̟aˈχɛːχɔː] 'and I will bless those that bless you' (Gen. 12.3)

According to Masoretic sources,[127] Ben Asher read a *shewa* on the *resh* in forms from the root גר"ש 'to drive out' as vocalic

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[125] The manuscript in the I Firkovitch collection labelled L17 by Yeivin (1968) has recently been identified by Phillips (2017) as being written by Samuel ben Jacob. See Phillips (2020) for a study of distribution of *ḥaṭef pataḥ* in L, L17 and other manuscripts attributed to Samuel ben Jacob.

[126] This is confirmed by *Hidāyat al-Qāri*ʾ, which states that מְבָֽרְכֶ֔יךָ 'has two accents and the *shewa* is vocalic' (Long version, edition in vol. 2 of this book, §II.L.3.2.7.).

[127] Baer and Strack (ed. 1879, §52), *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17).

when the third radical has *segol* before a suffix with a geminate *nun*, i.e. in the following three forms:

L: לֹ֥א אֲגָרְשֶׁ֛נּוּ [ʔaʁɔːʀ̟aˈʃɛːɛnnuː] 'I will not drive them out' (Exod. 23.29)

L: אֲגָרְשֶׁ֥נּוּ [ʔaʁɔːʀ̟aˈʃɛːɛn.nuː] 'I will drive them out' (Exod. 23.30)

L: וַאֲגָרְשֶׁ֖נּוּ [ʔaʁɔːʀ̟aˈʃɛːɛn.nuː] 'and I will drive them out' (Num. 22.6)

Elsewhere Ben Asher read a *shewa* on the *resh* of forms from this root as silent, e.g.

L: וַיְגָרְשׁ֖וּ [vajʁɔːɔʀ̟ˈʃuː] 'and they drove out' (Jud. 11.2)

L: גֵרְשׁ֣וּנִי [ʁeːeʀ̟ˈʃuːniː] 'they have driven me out' (1 Sam. 26.19)

There was one exception, in which Ben Asher read the *shewa* as vocalic (indicated by *ḥaṭef pataḥ* in L and A):

L, A: וַֽ֝יְגָרֲשֵׁ֗הוּ [ˌvaːjʁɔːʀ̟aˈʃeːhuː] 'and he drove him out' (Psa. 34.1)

By contrast, Ben Naftali read the *shewa* in all forms of the root גר״ש as silent.[128]

The same applies to the root אכ"ל.[129] Ben Asher read the *shewa* as vocalic in forms in which the third radical has *segol* before a suffix with geminate *nun*. These amount to 24 cases in total in the Hebrew Bible. All cases that are extant in A are

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[128] *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17, מה, ג).

[129] *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §22), *Treatise on the Shewa* (ed. Levy, 1936, ל).

vocalized with a *ḥaṭef pataḥ*. In L the marking of *ḥaṭef pataḥ* is not systematic. The *ḥaṭef* sign is found in only 14 cases out of 24, and in some of these the *ḥaṭef* appears to be a later modification of an original simple *shewa* sign:[130]

L: תְּאכֲלֶ֫נָּה [tʰoːχaːˈlɛːɛnnɔː] 'you shall eat it' (Gen. 3.17)

L: יֹאכֲלֶ֫נָּה [joːχaːˈlɛːɛnnɔː] 'he may eat it' (Lev. 6.11)

L: תֹאכֲלֶ֑נּוּ [tʰoːχaːˈlɛːɛnnuː] 'you may eat it' (Num. 18.10)

L, A: תְּאכֲלֶ֑נָּה [tʰoːχaˈlɛːɛnnɔː] 'you (ms) shall eat it' (Ezek. 4.12)

Examples from L with simple *shewa*:

L: יֹאכְלֶ֑נּוּ [joːχaːˈlɛːɛnnuː] 'he may eat it' (Lev. 7.6)

L: וְנֹאכְלֶ֥נּוּ [vanoːχaːˈlɛːɛnnuː] 'that we may eat him' (A: וְנֹאכֲלֶ֥נּוּ, 2 Kings 6.28)

L: וְנֹֽאכְלֶ֔נּוּ [vanoːχaːˈlɛːɛnnuː] 'that we may eat him' (A: וְנֹאכֲלֶ֥נּוּ, 2 Kings 6.29)

In other contexts, Ben Asher read the *shewa* as silent. In L and the extant portions of A a simple *shewa* sign is regularly marked in such cases:

L: תֹאכְל֣וּ [θoːoχˈluː] 'you shall [not] eat' (Deut. 14.21)

L: תֹּאכְל֖וּן [tʰoːoχˈluː.un] 'you shall [not] eat' (Num. 11.19)

L, A: וַיֹּאכְל֜וּ [vaɟɟoːoχˈluː] 'and they ate' (Jos. 5.11)

L, A: יֹאכְל֖וּ [joːoχˈluː] 'they will eat' (1 Kings 21.23)

[130] Cf. Phillips (2020), who notes that simple *shewa* is marked in these forms in the extant portions of other manuscripts written by Samuel ben Jacob, the scribe of L.

The sources indicate that also in the following form, where the *lamed* has *segol* but is not followed by a geminated *nun*, Ben Asher read the *shewa* as silent:

L: אוֹכְלֶ֑יהָ [ʔoːoχˈlɛːhɔː] 'those (m) who eat it' (Ecc. 5.10)

By contrast, Ben Naftali read the *shewa* as silent in all forms of the root אכ״ל, including those that are followed by a suffix with *segol* and geminated *nun*.[131]

According to *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §25), when forms from the roots יר"ד 'to come down' and הל"ך 'to go' are in *deḥiq* constructions (§I.2.8.1.2.) and are followed by a word beginning with a consonant with *dagesh*, then a *shewa* on the medial radical is vocalic. In L all of the cases are vocalized with *ḥaṭef pataḥ*, but most of these are the result of later corrections from an original simple *shewa* sign,[132] e.g.

L: אֵֽרֲדָה־נָּ֣א [ʔeːʀ̟aðɔ·-ˈnnɔː] 'I will go down' (Gen. 18.21)

L: אֵ֣לֲכָה נָּ֡א [ˈʔeːla.χɔ·-ˈnnɔː] 'let me go' (Exod. 4.18)[133]

L: נֵֽלֲכָה־נָּ֞א [ˌneːlaχɔ·-ˈnnɔː] 'let us go' (Exod. 3.18)

In the extant portions of A and in L17 (written by the scribe of L) they are regularly vocalized with *ḥaṭef pataḥ*, e.g.

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[131] *Kitāb al-Khilaf* (ed. Lipschütz 1965, 17, ג). Phillips (2020) suggests that the frequent lack of *ḥaṭef pataḥ* in this verb in L where Ben Asher read the *shewa* as vocalic may reflect that the scribe of L intended the vocalization to reflect a tradition corresponding to that of Ben Naftali.

[132] Dotan (1967, 276), Phillips (2020).

[133] In BHS the word is vocalized אֵ֣לְכָה according to the vocalization of the first hand in the manuscript.

L, A: וְנֵֽלֲכָה־לָּ֫נוּ (1 Sam. 26.11)

L, A: נֵֽלֲכָה־נָּ֫א (2 Kings 6.2)

L, A: אֵֽלֲכָה נָּ֫א 'I shall go' (Jer. 40.15)[134]

L, A, L17: נֵֽלֲכָה שָּׁ֫ם 'let us go there' (1 Sam. 9.6)

L, A, L17: אֵֽלֲכָה נָּ֫א 'I shall go' (אֵֽלֲכָה, 2 Sam. 15.7)

Diqduqe ha-Ṭeʿamim only mentions these two verbs in this rule. Saadya, however, in his *Kutub al-Lugha* gives the general rule that *shewa* after a long vowel is always vocalic when the vowel two syllables after it is stressed and is preceded by *dagesh* (ed. Dotan 1997, 464–69). In addition to forms of the verb הל״ך, he cites the following examples:

L: נִֽירֲשָׁה לָּ֑נוּ [ˈniːʀ̟aʃɔˑ ˈllɔːnuː] 'let us take possessions for ourselves' (A: נִֽירֲשָׁה, Psa. 83.13)

L: נֽוֹתְרָה־בָּ֫הּ [ˌnoːθɑrˤɔˑ-ˈbbɔːɔh] 'there is left in it' (A: נֽוֹתְרָה, Ezek. 14.22)

L: יָֽרְעָה לּ֑וֹ [ˈjɔːʀ̟ɔʕɔˑ ˈlloː] '[his soul] trembled' (A: יָֽרְעָה, Isa. 15.4)

Only the first of these examples is vocalized with *ḥaṭef pataḥ* in A. Saadya also cites the following Biblical Aramaic form as a case that follows the rule and so has vocalic *shewa* after the long vowel. This form is not a *deḥiq* construction, but has a *dagesh* in a suffix:

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[134] In BHS the word is vocalized אֵֽלְכָה according to the vocalization of the first hand in the manuscript.

L: יְשֵׁיזְבִנָּ֑ךְ [jaʃeːzavinˈnɔːɔχ] ‘he will deliver you’ (Dan. 6.17)

There are numerous other cases attested in the Hebrew Bible with the structure that according to Saadya’s formulation of the rule would be expected to have a vocalic *shewa*, although he does not refer to them explicitly. In all such cases, both L and A have a simple *shewa* sign, suggesting that these manuscripts reflect a reading with silent *shewa*, e.g.

L, A: עָֽשְׁקָה־לִּ֖י ‘it has oppressed me’ (Isa. 38.14)

L, A: עָ֣שְׂתָה זֹּ֑את ‘it did that’ (Isa. 41.20)

L, A: נָ֣שְׁבָה בּ֑וֹ ‘it breathed upon it’ (Isa. 40.7)

L, A: עָ֥רְבָה לִּֽי ‘it was pleasant to me’ (Jer. 31.26)

Some Karaite transcriptions explicitly mark the *shewa* as silent in such forms by an Arabic *sukūn* sign, e.g.

عاسْثا زّوث (BL Or 2548 fol. 50v, 7 | L [BHS]: עָ֣שְׂתָה זֹּ֑את Isa. 41.20 ‘it did’)

The manuscripts L and A sporadically mark a *ḥaṭef pataḥ* in place of *shewa* after a long vowel in forms that are not mentioned in the Masoretic sources, e.g.

L, A: אֲקָֽרֲבֶֽנּוּ ‘I would approach him’ (Job 31.37)

L, A: וְתִֽימֲר֖וֹת ‘columns’ (Joel 3.3)

A: אָ֣זֲלַת יָ֔ד ‘the power has gone’ (L [BHS]: אָ֣זְלַת יָ֔ד, Deut. 32.36)

In most cases where the *shewa* is vocalic in the forms cited in this section, one of the consonants involved is a sonorant ר /r/ or ל /l/. The general rule given by Saadya, however, would

potentially include cases where the sequence of consonants does not include a sonorant, and he indeed cites one such example from Biblical Aramaic (יְשֵׁיזְבִנָּךְ Dan. 6.17). The consonants in potential contact here, nevertheless, are still relatively weak (fricatives). The distribution of *ḥaṭef pataḥ* in A, on the other hand, appears to indicate that *shewa* was frequently read as silent in the context that Saadya claims would have a vocalic *shewa*, including several cases where one of the consonants is a sonorant.

There was variation with regard to the reading of the *shewa* in these contexts in various streams of the Tiberian tradition, as shown, for example, by the differences between Ben Asher and Ben Naftali in this regard that are referred to in *Kitāb al-Khilaf*. Saadya presents a type of reading in which the *shewa* was more regularly read as vocalic than in the traditions of Ben Asher and Ben Naftali and the evidence reflected by the early Bible codices.

The result of the reading of the *shewa* as vocalic was to break the contact between two consonants. This would have ensured that each consonant was flanked by vowels. The motivation for this may have been to increase the salience of the sonorants, which were weak consonants and vulnerable to loss or inadequate realization in certain circumstances.

In many of the forms discussed above, the *shewa* is read as vocalic where the form in question contains a geminated consonant in a suffix (e.g. תְּאכֲלֶ֫נָּה Gen. 3.17) or a following word to which the first word is bound prosodically by *maqqef* or *deḥiq* (נֵלֲכָה־נָּ֔א 2 Kings 6.2, אֵ֣לֲכָה נָּ֗א Exod. 4.18). This may have induced a quicker reading of the syllables and so increased the potential weakness of the sonorants. The *Hidāyat al-Qāriʾ* refers to the

quick reading and compression of vowels in constructions with *dagesh* associated with *deḥiq* (see §I.2.8.1.2.). Furthermore, long vowels in closed syllables in words read with a quick tempo were particularly vulnerable to contract due to their suboptimal structure. In the Karaite transcriptions, for example, a long vowel in a closed syllable in a word bound by maqqef to what follows is sometimes transcribed without a *mater lectionis*, reflecting the shortening of the vowel, e.g.

هذ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹד־ Psa. 111.3 'majesty')

هن (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹן־ Psa. 112.3 'wealth')

This potential contraction would have been prevented by reading the *shewa* as vocalic.

In forms with suffixes such as תְּאכַ֫לֶנָּה it could be hypothesized that the prolonged timing of the gemination resulted in a corresponding quickening of reading of the rest of the word.

With regard to the rules relating to the reading of forms from the root בר״ך, in a form without the stress before the *resh* such as בָּרְכֵ֫נִי (Gen. 27.34) the *resh* may have been weaker than in a form in which the stress is placed before the *resh*, such as וְהִתְבָּ֥רְכוּ ב֛וֹ (Jer. 4.2), and this motivated a reading with vocalic *shewa* that made the sonorant *resh* more salient in the first type of form.

I.2.5.7.6. Eliphelehu

In A a *ḥaṭef pataḥ* is written on the *pe* after a long vowel in the proper name וֶֽאֱלִ֣יפֲלֵ֗הוּ [vɛːʔɛˌliːfaˈleːhuː] 'and 'Eliphelehu' (L וֶֽאֱלִ֣יפְלֵ֗הוּ, 1 Chron. 15.18). This indicates that the *shewa* was read as vocalic although it is preceded by a long vowel. The etymology of this name is not fully clear (possibly: 'God distinguishes him' < אל + פלה). The vocalic *shewa* evidently reflects the interpretation of the name as a compound with a morphological division after the initial element אֱלִי.

I.2.5.8. Vocalic *Shewa* after Short Vowel Phonemes

A *shewa* in the middle of a word on a consonant without *dagesh* after a short vowel is normally silent and syllabified with the consonant that precedes it, e.g.,

מַמְרֵ֑א [mam.ˈʀ̟eː] (Gen. 13.18) 'Mamre'

In some circumstances, however, a consonant with *shewa* after a short vowel is syllabified in the onset of the following syllable. In such cases, the preceding short vowel is lengthened in compensation. This applies to the following cases.

I.2.5.8.1. The Definite Article

When the definite article is attached to a word beginning with the sonorant consonant *mem* with *shewa*, the gemination of the *mem* expected after the article is often lost, but the *mem* is syllabified with what follows, e.g.

הַֽמְדַבֵּ֥ר [haːmaðabˈbeːeʀ̟] 'the one speaking' (Gen. 45.12)

As can be seen, the *pataḥ* of the article is lengthened by compensation. This can be analysed as the replication of the short /a/ phoneme to take the place of */m/*, i.e.

/ham.mðab.bē.r/ > /haa.mðab.bē.r/

This compensatory lengthening is regularly marked by a *gaʿya* sign in the manuscripts. Yeivin (1980, 257–264) refers to the *gaʿya* in his context as a 'phonetic *gaʿya*', i.e. it reflects lengthening for the sake of resyllabification rather than musical cantillation. A *pataḥ* in an unstressed syllable followed by *shewa* would otherwise be read as a short vowel in a closed syllable. As with the case of a *shewa* on *resh* after the article (§I.2.5.7.4.), here also the motivation for this syllabification is morphological. Placing the *mem* in the syllable following that of the article creates a prosodic division between the article and the stem of the word following it. The compensatory lengthening, moreover, makes the article bimoraic and so brings it into line with its normal weight in other contexts, i.e. [hVC] or [hVV].

This resyllabification and compensatory lengthening do not take place in all cases where the gemination in *mem* is lost after the article. According to *Hidāyat al-Qāriʾ,* the length of the word is a conditioning factor:

> In words containing not more than five letters the *shewa* is vocalic, as in הַֽמְסֻכָּ֣ן תְּרוּמָ֔ה 'he who is impoverished in respect to offering' (Isa. 40.20), הַֽמְדַבֵּ֥ר 'the one speaking' (Gen. 45.12, etc.), except for one case, namely הַמְשֻׁגָּ֥ע הַזֶּ֖ה 'this madman' (2 Kings 9.11).[135]

[135] Long version, edition in vol. 2 of this book, §II.L.2.13.1.

In all such words in L a *gaʿya* occurs on the *pataḥ* after the *he*, with the exception of הַמְשֻׁגָּ֖ע (2 Kings 9.11). In A the vocalic *shewa* in such forms with an article is represented by *ḥaṭef pataḥ*, e.g. הֲֽמְסֻכָּ֣ן (Isa. 40.20), הֲֽמְדַבֵּ֣ר (2 Sam. 14.10), but in הַמְשֻׁגָּ֖ע (2 Kings 9.11) simple *shewa* is marked, reflecting the fact that it was read as silent.

Hidāyat al-Qāriʾ was referring to cases where the article is not preceded by a prefixed preposition. There are more exceptions among forms that have such prepositions before the article, e.g.

L, A: בַּמְּצָ֑ד 'in the stronghold' (1 Chron. 11.7)

L, A: לַמְצַ֔ד 'to the stronghold' (1 Chron. 12.9)

L, A: לַמְנַצֵּ֥חַ 'to the choirmaster' (Psa. 4.1, and *passim*)

L, A: לַמְנִ֖י 'for destiny' (Isa. 65.11)

As in הַמְשֻׁגָּ֖ע, the *shewa* in these words without *gaʿya* was silent. The passage in *Hidāyat al-Qāriʾ* continues:

> As for words beginning with *he* and *mem* that have more than five letters, … when the accent is on the fourth letter, the *shewa* is vocalic, for example, הַֽמְחַכִּ֣ים 'those who wait' (Job 3.21), הַֽמְנַדִּ֖ים 'those who remove' (Amos 6.3), and the like.[136]

Again A has *ḥaṭef pataḥ* in the cited words (הֲֽמְנַדִּ֖ים, הֲֽמְחַכִּ֣ים). In the medieval manuscripts words fitting the description in this passage have *gaʿya* and vocalic *shewa* (indicated by *ḥaṭef pataḥ* in the extant sections of A), with only a few exceptions, e.g. הַמְיַלֶּ֫דֶת

[136] Long version, edition in vol. 2 of this book, §II.L.2.13.1.

‘the midwife’ (Gen. 35.17) and, if the vowel letter is ignored, הַמְשׁוֹרֵ֖ר ‘the singer’ (L and A, 1 Chron. 6.18), which do not have *gaʿya* and so the *shewa* was silent.

With regard to longer words, *Hidāyat al-Qāriʾ* states the following:

> As for words beginning with *he* and *mem* that have more than five letters, the rule concerning these is that if the accent is on the fifth letter or later, the *shewa* is silent, for example הֽ͏ַמְדַבְּרִ֗ים ‘those who speak’ (Exod. 6.27), הַֽמְאָרְרִֽים ‘those that curse’ (Num. 5.19), apart from some exceptions that deviate from this rule, for example הַֽמְבַקְשִׁ֖ים ‘those who seek’ (Exod. 4.19, etc.).[137]

In a form such as הֽ͏ַמְדַבְּרִ֗ים the *gaʿya* reflects the lengthening of the *pataḥ* after the *he* but the *shewa* on the *mem* is silent. The key factor that conditions the reading of the *shewa* as silent emerges more clearly from *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §14), where a more detailed list of forms with silent *shewa* on the *mem* is given. The full list of these forms with silent *shewa* is as follows:[138]

L: הֽ͏ַמְדַבְּרִ֗ים [ˌhaˑmðabbaˈʀ̟iːim] ‘those who speak’ (Exod. 6.27)

L: הֽ͏ַמְיַלְּדֹ֗ת [ˌhaˑmjallaˈðoːoθ] ‘the midwives’ (Exod. 1.17)

L, A: הֽ͏ַמְזַמְּר֣וֹת [ˌhaˑmzammaˈʀ̟oːoθ] ‘the snuffers’ (2 Kings 25.14), הֽ͏ַמְזַמְּר֜וֹת (Jer. 52.18)

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[137] Long version, edition in vol. 2 of this book, §II.L.2.13.1.

[138] A similar list is cited in the treatise on the *shewa* (ed. Levy 1936, כט).

L, A: הַֽמְקַטְּרִ֖ים [ˌha·mqɑttˤɑˈʀ̟iːim] ‘those who burn incense’ (2 Kings 23.5)

L: וְהַֽמְהַלְלִ֖ים [vaˌha·mhaːlaˈliːim] ‘those who praise’ (A וְהַֽמְהַֽלְלִ֖ים, 2 Chron. 23.12)

L, A: הַֽמְבַשְּׁלִ֔ים [ˌha·mvaʃʃaˈliːim] ‘those who cook’ (Ezek. 46.24)

L, A: הַֽמְשַׂחֲקֽוֹת [ˌha·msaːħaˈq̟oːoθ] ‘the ones (fpl) playing’ (1 Sam. 18.7)

L, A: הַֽמְחֻלָּ֣ל [ˌha·mħulˈlɔːɔl] ‘the one profaned’ (Ezek. 36.23)

L, A: הַֽ֝מְבַשְּׂר֗וֹת [ˌha·mvassaˈʀ̟oːoθ] ‘those who bear tidings’ (Psa. 68.12)

L: הַֽמְעַשְּׂרִ֔ים [ˌha·mʕassaˈʀ̟iːim] ‘those who collect tithes’ (Neh. 10.38)

L: הַֽמְאָרֲרִ֖ים [ˌha·mʔɔːʀ̟aˈʀ̟iːim] ‘those that curse’ (Num. 5.19)

L: הַֽמְשֹׁרְרִ֑ים [ˌha·mʃoːʀ̟aˈʀ̟iːim] ‘the singers’ (Ezra 2.41)

L, A: הַֽמְצַפְצְפִ֖ים [ˌha·msˤɑfsˤɑˈfiːim] ‘those who chirp’ (Isa. 8.19)

L, A: הַֽ֝מְיַשְּׁרִ֗ים [ˌha·mjaʃʃaˈʀ̟iːim] ‘those who make straight’ (Prov. 9.15)

L, A: הַֽמְעֻשָּׁקָ֔ה [ˌha·mʕuʃʃɔːˈq̟ɔː] ‘the oppressed’ (Isa. 23.12)

L, A: הַֽמְקַבְּרִ֔ים [ˌha·mq̟abbaˈʀ̟iːim] ‘those who bury’ (Ezek. 39.15)

L: הַמְהַלְּכִ֖ים [ˌha·mhallaˈχiːim] ‘those who move’ (Ecc. 4.15)

L, A: הַֽמְקַטְּר֣וֹת [ˌha·mq̟ɑttˤɑˈʀ̟oːoθ] ‘(altars) for burning incense’ (2 Chron. 30.14)

As can be seen, A, in the portions that are extant, always marks the *mem* with a simple *shewa* sign.

The vast majority of the forms in this list have the syllable structure that is associated with the so-called minor *gaʿya*. This is a musical secondary stress that occurs predominantly in words with disjunctive accents on a short vowel in a closed syllable. It occurs predominantly on a syllable that is separated from the stressed syllable by another closed syllable, which in turn is followed by vocal *shewa* or by an open syllable followed by a *ḥaṭef* with an identical quality. These syllabic patterns may be represented thus: מֵֽתְפַּלְפְּלִ֔ים, מֵֽתְקַטְּלִ֔ים and מֵֽתְפַּעֲלִ֔ים. Examples of each of these are:

> הַֽכַּרְמְלִית [ˌha·kkʰaʀ̟maˈliːiθ] ‘the woman of Carmel’ (1 Sam. 27.3)
>
> נִֽתְחַכְּמָ֖ה [ˌni·θħakkʰaˈmɔː] ‘let us deal wisely’ (Exod. 1.10)
>
> הַֽמַּחֲנֶ֖ה [ˌha·mmaːħaˈnɛː] ‘the camp’ (Gen. 50.9)
>
> מִֽשְׁתַּחֲוִ֖ים [ˌmi·ʃtʰaːħaˈviːim] ‘prostrating (mpl) themselves’ (Gen. 37.9).[139]

There is evidence that the duration of the vowel lengthened by minor *gaʿya* was less than that of a long vowel in an open syllable or of a vowel in a syllable with the main stress (§I.2.8.2.). It appears not to have been fully bimoraic and did not induce the insertion of an epenthetic vowel or resyllabification of the consonant in the coda with the next syllable. For this reason, the vowel is transcribed with the IPA symbol for half-long [CV·C].

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[139] Yeivin (1980, 244–245). For more details concerning the minor *gaʿya* see §I.2.8.2.2.

Minor *gaʿya* also occurs less consistently on a range of other closely related structures, e.g.

> הַֽכְּנַֽעֲנִֽית (with vocalic *shewa* additional to the מֶֽתְפַּֽעֲלִ֔ים pattern) ‘the Canaanite woman’ (1 Chron. 2.3)

> וַֽיִּלָּחֲמ֖וּ (with a vowel of different quality before the *ḥaṭef*) ‘and they fought’ (Josh. 10.36)

It very rarely occurs on a syllable that is separated from the accent by only one syllable, e.g.

> נִֽמְצָא־קֶ֙שֶׁר֙ ‘a conspiracy is found’ (Jer. 11.9).

Most of the cases where the *shewa* on the *mem* is silent after the *gaʿya* that are cited in *Diqduqe ha-Ṭeʿamim* have the syllabic patterns that are suitable for minor *gaʿya*, e.g. הַֽמְצַפְצְפִ֖ים [ˌhaˑm-sˤɑfsˤɑˈfiːim] ‘those who chirp’ (Isa. 8.19), הַֽמְדַבְּרִ֗ים [ˌhaˑmðab-baˈʀ̟iːim] ‘those who speak’ (Exod. 6.27) and as הַֽמְשַׂחֲק֔וֹת [ˌhaˑm-saːħaˈq̟oːoθ] ‘the ones (fpl) playing’ (1 Sam. 18.7). In such cases, therefore, it can be assumed that the *gaʿya* is the musical minor *gaʿya*. The reading with musical minor *gaʿya* in such forms evidently outranked the morphologically motivated syllabification that conditioned the reading of the *shewa* as vocalic.

Two of the forms cited by *Diqduqe ha-Ṭeʿamim* as cases with silent *shewa* under the *mem* have conjunctive accents, viz. הַֽמְזַמְּר֣וֹת (L and A) ‘the snuffers’ (2 Kings 25.14), הַֽמְקַטְּרִ֥ים (L and A) ‘those who burn incense’ (2 Kings 23.5). As remarked, minor *gaʿya* does not commonly occur on forms with conjunctive accents and so they must be considered to be not fully optimal for it. Some of the cited forms, moreover, have syllable structures that are not fully optimal for minor *gaʿya*, e.g. הַֽמְאָֽרֲרִ֖ים (L) ‘those that curse’

(Num. 5.19), הַֽמְשֹׁרְרִ֑ים (L) ‘the singers’ (Ezra 2.41), in which the vowel in the second open syllable is not of the same quality as the following vocalic *shewa*. Two of the cited cases have a syllable structure that deviates more radically from the one that is optimal for minor *gaʿya*, viz. the *puʿal* participles הַֽמְעֻשָּׁקָ֔ה (L and A) ‘the oppressed’ (Isa. 23.12) and הַֽמְחֻלָּ֗ל (L and A) ‘the one profaned’ (L and A, Ezek. 36.23). By contrast, the *puʿal* participle הַֽמְקֻדָּשׁ ‘the consecrated’ (A הַֽמֲקֻדָּשׁ, Ezek. 48.11), which is identical in syllable structure to הַֽמְחֻלָּ֗ל, has a vocalic *shewa*.

Forms cited by *Diqduqe ha-Ṭeʿamim* as cases that have vocalic *shewa* include a construction with a disjunctive accent that has the main accent on the fifth letter but has a syllable structure that is not optimal for minor *gaʿya*, viz. הַֽמְבַקְשִׁ֖ים (L) ‘those who seek’ (Exod. 4.19), in which the *shewa* on the *qof* is silent. An analogous case is וְהַֽמְמַלְאִ֖ים (L) ‘and those who fill’ (A וְהַֽמֲמַלְאִ֖ים, Isa. 65.11). The cited forms with vocalic *shewa*, confirmed by the occurrence of *ḥaṭef pataḥ* in the extant portions of A, include also cases that have a syllable structure optimal for minor *gaʿya* but have a conjunctive accent, which is not optimal for minor *gaʿya*, e.g.

L: הַֽמְדַבְּרִ֣ים ‘those who speak’ (A: הַֽמֲדַבְּרִ֣ים 2 Chron. 33.18)

L: הַֽמְשַׁלְּחִ֣ים ‘those that send’ (A: הַֽמֲשַׁלְּחִ֣ים 2 Chron. 32.31)

L, A: הַֽמֲתַעֲבִ֣ים ‘the ones abhorring’ (Mic. 3.9)

Also cited is הַֽמְצֹרָעִ֗ים (L) ‘the lepers’ (A הַֽמֲצֹרָעִ֗ים, 2 Kings 7.8), which has a conjunctive accent and a syllable structure that is not optimal for minor *gaʿya*. The list of forms with vocalic *shewa* includes הַֽמְלקקים ‘those who lap’. A version of the rule

specifies המלקקים בידם וחברו, which indicates that the two occurrences of this word in Jud. 7, (verses 6 and 7) are intended.[140] In L and also L17, written by Samuel ben Jacob, the scribe of L (Phillips 2020), marks a *ḥaṭef pataḥ* on both occurrences, but A marks *ḥaṭef pataḥ* only on the form in Jud. 7.7:

L, L17 הַֽמֲלַקְּקִ֤ים (A הַֽמְלַקְּקִ֤ים, Jud. 7.6)

L, L17, A: הַֽמֲלַקְּקִים֙ (Jud. 7.7)

In Jud. 7.6 the form has a conjunctive accent and in Jud. 7.7 a disjunctive. It has a syllable structure that is suitable for minor *gaʿya* but has vocalic *shewa* even when it has a disjunctive accent. It is not clear why A vocalizes the form in Jud. 7.6 with a simple *shewa* sign.

A similar case is the following pair:

L: הַֽמְרַגְּלִ֤ים ‘those who spy’ (A: הַֽמֲרַגְּלִ֤ים, Josh. 6.22)

L: הַֽמְרַגְּלִ֔ים (A הַֽמֲרַגְּלִ֔ים, Josh. 6.23)

These both have a structure optimal for minor *gaʿya* but the *shewa* is vocalic in both occurrences even though the second occurrence (Josh. 6.23) has a disjunctive accent.

In conclusion, there is no absolute rule or consistency relating to places where the *shewa* under the *mem* was read as silent. The somewhat arbitrary distribution of forms with silent *shewa* was fixed in particular streams of the Tiberian tradition. The *gaʿya* on such forms should be identified as a musical minor

[140] *The Treatise on the Shewa* in the Genizah manuscript CUL Or 1080.13.3.2, fol. 2r; cf. Yeivin (1968, 27).

gaʿya, since the majority of forms have a structure that is optimal for minor *gaʿya*. The minor *gaʿya* was a secondary accent and so the short vowel was lengthened by stress rather than by the augmentation of the syllable at an underlying level. For this reason, the *shewa* was silent. The underlying syllabic structures of הֲֽמְדַבֵּ֣ר 'the one speaking' (Gen. 45.12) and הַֽמְדַבְּרִ֔ים 'those who speak' (Exod. 6.27) can be represented thus:

/haa.mðab.bē.r/ [haːmaðabˈbeːeʀ̟]

/ham.ðab.brī.m/ [ˌhaˑmðabbaˈʀ̟iːim]

Some words beginning with the article + *mem* with *shewa* (הַמְ) that consist of more than five letters and are stressed on the fifth letter or later are not marked with a *gaʿya* in the manuscripts, suggesting that the *pataḥ* was pronounced short and the *shewa* was silent, e.g.

L: הַמְקֻשָּׁר֔וֹת [hamq̟uʃʃɔːˈʀ̟oːoθ] 'the ones bound' (Gen. 30.41)

L: הַמְאָדָּמִ֔ים [hamʔɔddɔːˈmiːim] 'those dyed red' (Exod. 39.34)

L: הַמְאָרְרִ֖ים [hamʔɔːʀ̟aˈʀ̟iːim] 'the cursing' (Num. 5.22)

L: הַמְאֹרָשָׂ֑ה [hamˌʔoːʀ̟ɔːˈʃɔː] 'the betrothed one' (Deut. 22.25)

According to *Kitāb al-Khilaf,* there were differences between Ben Asher and Ben Naftali regarding the reading of words beginning with הַמְ with minor *gaʿya*. In Exod. 6.27, for example, it is reported that Ben Asher read הַמדברים without minor *gaʿya* whereas Ben Naftali read this הֲֽמדברים with minor *gaʿya* (ed. Lipschütz 1965, י). In this case, L corresponds to the reading of Ben Naftali (הַֽמְדַבְּרִ֔ים 'the ones who speak'). Ben Asher read the *shewa* on the *mem* in the word הֲֽמְרַגְּלִ֔ים in Josh. 6.22 and Josh. 6.23 as

vocalic, but Ben Naftali regularly read it as silent (ed. Lipschütz 1965, 20, כד).

When the *pataḥ* of the article before מְ has *gaʿya*, the Karaite Arabic transcriptions generally represent it as long by transcribing it with *mater lectionis ʾalif*, e.g.

هامزماثا [haːmazimmɔːˈθɔː] (BL Or 2549 fol. 82r, 7 | L [BHS]: הַֽמְזִמָּ֫תָה, A הַֽמְזִמָּ֫תָה, Jer. 11.15 'the wickedness')

هامبقشيم [haːmavaqˈʃiːim] (BL Or 2544, fol. 111v, 12 | L [BHS]: הַֽמְבַקְשִׁ֖ים Exod. 4.19 'those who seek')

هاميلذوث [ˌha·mjallaˈðoːoθ] (BL Or 2542, fol. 43v, 6 | L [BHS]: הַֽמְיַלְּדֹ֔ת Exod. 1.17 'these, who help to give birth')

In the manuscript BL Or 2555, a vocalic *shewa* is explicitly marked with a *pataḥ* sign and so forms with vocalic and silent *shewa* are distinguished. This corresponds to the distribution of vocalic and silent *shewa* discussed above, e.g.

هامشلاش [haːmaʃulˈlɔːɔʃ] (BL Or 2555 fol. 29r, 3 | L [BHS]: הַֽמְשֻׁלָּ֔שׁ phonetic *gaʿya* and vocalic *shewa*, Ecc. 4.12 'the threefold')

هامهلّخيم [ˌha·mhallaˈχiːim] (BL Or 2555 fol. 33r, 3 | L [BHS]: הַֽמְהַלְּכִ֖ים minor *gaʿya* and silent *shewa*, Ecc. 4.15 'those who move')

It is significant that in some manuscripts a phonetic *gaʿya* on הַמְ is neither marked in the manuscript nor represented in the transcription where it occurs in L and A, e.g.

> هَمهليح [hamhalˈleːeχ] (BL Or 2551 fol. 78v, 6 | L [BHS]: הַֽמְהַלֵּ֥ךְ, A הַֽמֲהַלֵּ֥ךְ, Psa. 104.3 ‘he who walks’)

> همنسليح [hamʃalˈleːaχ] (BL Or 2551 fol. 81v, 3 | L [BHS]: הַֽמְשַׁלֵּ֣חַ, A הַֽמֲשַׁלֵּ֣חַ, Psa. 104.10 ‘he who sends’)

This evidently reflects other variant streams of the Tiberian tradition in which the *shewa* was pronounced silent without lengthening of the *pataḥ* in these forms. Further evidence for this can be found in manuscripts with Babylonian vocalization that reflect a reading that has converged very closely with the Tiberian tradition. Of particular relevance is the manuscript I Firkovitch Evr. I B 3, containing the Latter Prophets, which distinguishes length of vowels in closed syllables by means of the compound Babylonian sign system (§I.2.5.1.).[141] Where L and A have *gaʿya* on the *pataḥ* of the definite article, the *pataḥ* in I Firkovitch Evr. I B 3 is sometimes represented as long. In several cases, however, the *pataḥ* is represented as short (Yeivin 1985, 413), e.g.

> המלאה [hamleːʔˈɔː] ‘the one full’ (L: הַֽמְלֵאָ֖ה, A: הַֽמֲלֵאָ֖ה, Amos 2.13)

[141] Named the Codex Babylonicus Petropolitanus in the facsimile edition by Strack (1876).

הׄמׄבׄקׄשׁׄים [hamvaq̟ˈʃiːim] ‘those who seek’ (L: הַֽמְבַקְשִׁ֖ים, A: הַֽמֲבַקְשִׁ֖ים, Jer. 11.21)

הׄמׄתׄעׄבׄים [hamθaːʕaˈviːim] ‘the ones abhorring’ (L, A: הַֽמֲתַעֲבִ֣ים, Mic. 3.9)

Such manuscripts with Babylonian vocalization, the Karaite transcriptions and the lists of differences between Ben Asher and Ben Naftali provide evidence of degrees of variation in the Tiberian tradition both within the Tiberian school and outside of the inner circles of the Tiberian Masoretic school. The variation relating to the particular feature in question appears to have been arbitrary. Also within the inner Tiberian tradition, as we have seen, there was some degree of arbitrariness in the distribution of the vocalic and silent *shewa* in this feature. A particular distribution containing some apparently arbitrary inconsistency (e.g. the silent *shewa* in הַמְשֻׁגָּ֥ע 2 Kings 9.11) became fixed in the tradition.

The gemination of a *mem* with *shewa* after the definite article is retained in numerous cases, e.g.

הַמְּלָכִ֔ים ‘the kings’ (Gen. 36.31)

הַמְּזוּזֹ֑ת ‘the doorposts’ (Exod. 12.7)

הַמְּנוֹרָ֔ה ‘the lampstand’ (Exod. 25.31)

הַמְּצֹרָ֔ע ‘the leper’ (Lev. 14.2)

The vocalization of the definite article exhibits different patterns before other consonants that have a tendency to lose gemination when vocalized with *shewa*, i.e. the sonorants *nun*, *yod*, *lamed*, the sibilants and *qof*.

Gemination is occasionally lost in *nun* and the *pataḥ* is marked with *gaʿya*, e.g.

L: וְהַֽנְשַׁמּ֥וֹת [vahaːnaʃamˈmoːoθ] ‘and the desolated ones’ (A וְהַֽנֲשַׁמּ֥וֹת Ezek. 36.35)

The vocalization with *ḥaṭef pataḥ* in A demonstrates that the *shewa* was vocalic.

The lengthening of the *pataḥ* in such cases is represented by *mater lectionis ʾalif* in the Karaite transcriptions, even when a *gaʿya* sign is not marked in the transcription manuscript, e.g.

هانشمّوث [haːnaʃamˈmoːoθ] (BL Or 2549 fol. 106v, 15 | L [BHS]: הַֽנְשַׁמּ֗וֹת, A הַֽנֲשַׁמּ֗וֹת, Jer. 33.10 ‘those that are desolate’)

In בַּֽנְחֻשְׁתַּ֔יִם ‘with bronze fetters’ (Jud. 16.21) both L and A have simple *shewa*, so the reading of the *shewa* is not clear. In many cases the gemination is retained, e.g.

הַנְּעָרִ֔ים ‘the young men’ (Gen. 14.24)

הַנְּפִלִ֞ים ‘the Nephilim’ (Gen. 6.4)

Gemination is sometimes lost in *yod*, but the *shewa* is silent and there is no compensatory lengthening, e.g.

הַיְלָדִ֕ים ‘the children’ (Gen. 33.5)

הַיְבוּסִ֔י ‘the Jebusite’ (Josh. 15.8, etc.)

לַיְשָׁרִ֑ים ‘for the upright’ (Psa. 112.4)

בַּיְרִיעָ֖ה ‘on the curtain’ (Exod. 26.5)

In several places the gemination is retained, e.g.

הַיְּעֵלִ֑ים 'the wild goats' (1 Sam. 24.3)

הַיְּהוּדִים֙ 'the Jews' (2 Kings 25.25)

הַיְּוָנִ֑ים 'the Greeks' (Joel 4.6)

Lamed loses gemination after the definite article in the frequent phrase הַלְוִיִּ֖ם 'the Levites' (Exod. 6.25, etc.) without compensatory lengthening. Elsewhere the *lamed* is geminated, e.g.

הַלְּבֹנָ֔ה 'the frankincense' (Lev. 6.8)

הַלְּבָנ֔וֹן 'Lebanon' (Josh. 9.1)

The sibilants generally have gemination after the article. It is lost in a few words. In some such cases, the *shewa* is vocalic and there is compensatory lengthening, e.g.

L: בַּסְעָרָ֖ה [baːsɔʕɔːˈʀ̟ɔː] 'by the whirlwind' (A בַּֽסְעָרָ֖ה 2 Kings 2.1, 11)

L: לַֽשְׁפַנִּֽים [laːʃafanˈniːim] 'for the badgers' (A לַֽשְׁפַנִּ֑ים Psa. 104.18)

L: וְהַֽשְׁפַתַּ֗יִם [vahaːʃafatˈtʰiːim] 'and the hooks' (A וְהַֽשְׁפַתַּ֗יִם, Ezek. 40.43)

In other cases the *shewa* is silent and there is no compensatory lengthening, e.g.

L, A: הַשְׁלַבִּ֖ים 'the frames' (1 Kings 7.28)

L: הַזְקֵנִ֖ים 'the elders' (A: הַזְּקֵנִ֖ים 1 Kings. 21.8)

L: בַּשְׂאֵ֗ת 'in the swelling' (Lev. 13.10)

As for the word 'the frogs' (Exod. 8.9, etc.), a surviving fragment of A of Exod. 8.9 has a *ḥaṭef pataḥ* under the *ṣade* of this

word (הָֽצְפַרְדְּעִים), indicating that the *shewa* was vocalic despite the fact that its structure is appropriate for minor *gaʿya*.

Qof generally retains gemination, e.g.

הַקְּדֵשָׁה ‘the harlot’ (Gen. 38.21)

הַקְּרָשִׁים ‘the boards’ (Exod. 26.15)

There are a few exceptions, e.g.

L: הַקְטַנִּים ‘the small ones’ (A הַקְּטַנִּים Isa. 36.9)

L, A: בַּקְרָב ‘in the battle’ (2 Sam. 17.11)

L, A: לַקְרָב ‘for the battle’ (Psa. 144.1).

I.2.5.8.2. Interrogative *He*

When interrogative *he* is prefixed to a word beginning with a letter with *shewa*, the interrogative *he* is often vocalized with *pataḥ* and the *shewa* is silent, e.g.

הַמְעַט [hamˈʕɑːɑtˤ] ‘Is it a small matter?’ (Gen. 30.15)

הַמְעָרַת פָּרִצִים הָיָה הַבַּיִת הַזֶּה [hamʕɔːˈʀ̟aːaθ] ‘Has this house become a den of robbers?’ (Jer. 7.11)

הַכְזוֹנָה יַעֲשֶׂה אֶת־אֲחוֹתֵנוּ [haχzoːˈnɔː] ‘Should he treat our sister as a harlot?’ (Gen. 34.31)

הַלְהָרְגֵנִי אַתָּה אֹמֵר [halhɔʀ̟ˈʁeːniː] ‘Do you intend to kill me?’ (Exod. 2.14)

הַלְיָרְשֵׁנוּ קְרָאתֶם לָנוּ [haljɔʀ̟ˈʃeːnuː] ‘Have you invited us here to impoverish us?’ (Jud. 14.15)

הַבְסוֹד אֱלוֹהַ תִּשְׁמָע [havˈsoːoð] ‘Have you listened to the council of God?’ (Job 15.8)

הַבְעַ֣ד עֲרָפֶ֣ל יִשְׁפּֽוֹט [havˈʕaːað] ‘Can he judge through the deep darkness?’ (Job 22.13)

On some occasions, a phonetic *gaʿya* is marked on the *pataḥ* and the *shewa* is read as vocalic. One such case is listed in §14 of *Diqduqe ha-Ṭeʿamim*:

L: הֲֽמְצָאתַ֖נִי [haːmasˁɔːˈθaːniː] ‘have you found me?’ (A הֲֽמֲצָאתַ֖נִי 1 Kings 21.20)

As is the case with the phonetic *gaʿya* on the definite article, the purpose of this is likely to be to create a syllabic division between the interrogative particle and the following word in order to mark a clear morphological division. When the initial consonant of the word is syllabified in the onset of the following syllable, the *pataḥ* is lengthened by compensation:

/ham.sˁɔ̄.θɔ̄.nī/ > /haa.msˁɔ̄.θɔ̄.nī/ [haː.ma.sˁɔː.ˈθaː.niː].

In the extant portions of A, the vocalic reading of the *shewa* is made explicit by a *ḥatef* sign. Further examples:

L: הֲֽמְכַסֶּ֤ה אֲנִי֙ [haːmaχaˈsɛː] ‘Shall I hide?’ (Gen. 18.17)

L: הֲֽבְרָכָ֨ה אַחַ֥ת [haːvaʀ̟ɔːˈχɔː] ‘one blessing?’ (Gen. 27.38)

L: הֲֽנְקַלָּ֤ה [haːnaq̟alˈlɔː] ‘Is it a little thing?’ (A: הֲֽנֲקַלָּ֤ה 1 Sam. 18.23)

L: הֲֽשְׁכַחְתֶּם֙ [haːʃaχaħˈtˁɛːɛm] ‘Have you forgotten?’ (A: הֲֽשֲׁכַחְתֶּם֙ Jer. 44.9)

L: הֲֽתְקַשֵּׁ֗ר [haːθaq̟aʃˈʃeːerˁ] ‘Can you bind?’ (A: הֲֽתֲקַשֵּׁ֗ר Job 38.31)

L: הַֽתְשַׁלַּ֣ח [haːθaʃalˈlaːaħ] ‘Can you send forth?’ (A: הֲֽתְשַׁלַּ֣ח Job 38.35)

L: הַֽתְמַלֵּ֣א [haːθamalˈleː] ‘Can you fill?’ (A: הֲֽתְמַלֵּ֣א Job 40.31)

In a few cases where *gaʿya* is marked on interrogative *he* both L and A have a simple *shewa* on the following consonant:

L, A: הַֽ֭לְעוֹלָמִים יִזְנַ֥ח ׀ אֲדֹנָ֑י ‘Will the Lord spurn forever?’ (Psa. 77.8)

L, A: הַֽתְשַׂחֶק־בּ֭וֹ ‘Will you play with him?’ (Job 40.29)

In the first case, the lack of a *ḥaṭef* in A is most likely due to the fact that there was no suitable *ḥaṭef* to represented the short [o] quality of the *shewa* before the guttural: [haːlo-ʕoːlɔːˈmiːim].

The lengthening of the *pataḥ* of the interrogative particle is reflected by *mater lectionis ʾalif* in the Karaite Arabic transcriptions, e.g.

هاثقشير [haːθaqaʃˈʃeːeʀ] (BL Or 2552 fol. 81r, 15 | L [BHS]: הַֽתְקַשֵּׁ֣ר, A הֲֽתְקַשֵּׁ֣ר, Job. 38.31 ‘will you bind?’)

هاثملي [haːθamalˈleː] (BL Or 2552 fol. 85r, 9 | L [BHS]: הַֽתְמַלֵּ֣א, A הֲֽתְמַלֵּ֣א, Job. 40.31 ‘will you fill?’)

هاثساحق-بو [haːθasaːħɛq-ˈboː] (BL Or 2552 fol. 84v, 11 | L [BHS], A הַֽתְשַׂחֶק־בּ֭וֹ, Job. 40.29 ‘will you play with him?’)

The early Tiberian biblical codices exhibit some degree of variation, e.g.

L: הַמְעָרַ֣ת פָּרִצִ֗ים הָיָ֨ה הַבַּ֧יִת הַזֶּ֛ה without *gaʿya* [hamʕɔːˈʀ̟aːaθ] ‘Has this house become a den of robbers?’ (A הֲמְֽעָרַ֣ת [haːmɔ-ʕɔːˈʀ̟aːaθ], Jer. 7.11)

Some variation is found also in the Tiberian tradition reflected by manuscripts with Babylonian vocalization, such as I Firkovitch Evr. I B 3, containing the Latter Prophets, which distinguishes length of vowels in closed syllables by means of the compound Babylonian sign system:

L: הֲֽשְׁכַחְתֶּ֖ם [haːʃaχaħˈtˤɛːɛm] ‘Have you forgotten?’ (A: הֲֽשְׁכַחְתֶּ֖ם, I Firk. Evr. I B 3 השׁכחתם [haʃkaħˈtʰaːam], Jer. 44.9)

Another strategy to mark clear a morphological division between the interrogative particle and what follows is to geminate the consonant following the particle (§I.3.1.8.), e.g.

הַכְּצַעֲקָתָ֛הּ [hakkʰasˤaːʕaqɔːˈθɔːɔh] ‘whether it according to its outcry’ (Gen. 18.21)

הַכֶּר־נָ֗א הַכְּתֹ֧נֶת בִּנְךָ֛ הִ֖וא [hakkʰaˈθoːnɛθ] ‘acknowledge now whether it is your son's robe’ (Gen. 37.32)

הַבְּמַֽחֲנִ֖ים [habbamaːħaˈniːim] ‘is it in camps?’ (Num. 13.19)

הַכְּמַכַּ֥ת מַכֵּ֖הוּ הִכָּ֑הוּ [hakkʰamakˈkʰaːaθ] ‘Has he struck him as the one who struck him?’ (Isa. 27.7)

הַרְּאִיתֶם֙ [haʀ̟ʀ̟iʔiːˈθɛːɛm] ‘Have you seen?’ (1 Sam. 10.24)

I.2.5.8.3. Two Identical Consonants

As remarked in §I.2.5.7.3., a *shewa* that occurs on the first of two identical consonants after a short vowel was read as silent in the Tiberian tradition, e.g.

הִנְנִ֯י [hinˈniː] ‘behold me’ (Gen. 6.17)

On many occasions, however, the vowel before the identical consonants in such forms is lengthened and the *shewa* is read as vocalic. The lengthening of the vowel is, in principle, marked by a *gaʿya* sign in the early codices. In the extant portions of A, the vocalic reading of the *shewa* is generally indicated explicitly by marking a *ḥaṭef pataḥ* sign. A *ḥaṭef pataḥ* is sometimes found also in L, but most of these are misshapen and are clearly the result of a later correction, e.g.

L, A: צִֽלֲלֹ֑ו [sˤiːlaˈloː] ‘his shade’ (Job 40.22)

L, A: קִֽלֲלַ֥ת [qiːlaˈloːoθ] ‘the curse of’ (Jud. 9.57)

L: מִֽלֲלַ֤י גִּֽלֲלַ֤י [miːlaˈlaːj giːlaˈlaːj] ‘Milalai, Gilalai’ (Neh. 12.36)

The main motivation for reading the *shewa* as vocalic was doubtless to ensure that the two identical letters in contact were given their full articulation and not slurred together. The insertion of a vowel between them would have made each more salient. This was achieved by augmenting the preceding syllable with a vowel mora, which would have conditioned a resyllabification. The *gaʿya* can be identified with what Yeivin calls a phonetic *gaʿya*. This was, in essence, a mark of ‘mora-augmenting’ lengthening:

/sˤil.lō/ > /sˤii.llō/ [sˤiː.laloː]

The normal practice in L, however, is for a phonetic *gaʿya* to be marked on the vowel and a simple *shewa* sign on the first of the identical consonants. In the extant portions of A, a *ḥaṭef pataḥ* is usually marked in such cases, e.g.

L: רִֽבְבוֹת [ʀ̟iːvaˈvoːoθ] 'the ten thousands of' (Num. 10.36)

L: בְּרִֽבְבוֹת [baʀ̟iːvaˈvoːoθ] 'with ten thousands of' (A בְּרִֽבֲבוֹת, Mic. 6.7)

L: בְּחַֽצְצֹן תָּמָר [baħaːsˤɑˈsˤoːon tʰɔːˈmɔːɔʀ̟] 'in Hazazontamar' (Gen. 14.7)

L: וּפִֽלְלוֹ [wufiːlaˈloː] 'and he will mediate for him' (A: וּפִֽלֲלוֹ, 1 Sam. 2.25)

L: חַֽלְלֵי [ħaːlaˈleː] 'the slain of' (A: חַֽלֲלֵי, 1 Sam. 17.52)

L: בְּקַֽלְלוֹ [baqa̟ːlaˈloː] 'when he cursed' (A: בְּקַֽלֲלוֹ, 2 Sam. 16.7)

L: מַה־תִּתְהַֽלְלִי [maː-ttiθhaːlaˈliː] 'why do you boast?' (A: תִּתְהַֽלֲלִי, Jer. 49.4)

L: בְּגֶֽלְלֵי [baʁɛːlaˈleː] 'the dung of' (A: בְּגֶֽלֲלֵי, Ezek. 4.12)

L: שִֽׁמְמוֹת [ʃiːmaˈmoːoθ] 'devastations of' (A: שִֽׁמֲמוֹת, Ezek. 35.9)

L: יִֽלְלַת [jiːlaˈlaːaθ] 'the howling of' (A: יִֽלֲלַת, Zech. 11.3)

L: בְּעַֽנְנִי [baʕaːnaˈniː] 'when I bring clouds' (A: בְּעַֽנֲנִי, Gen. 9.14)

L: חָֽנְנֵנִי [ħɔːnaˈneːniː] 'be gracious to me' (A: חָֽנֲנֵנִי, Psa. 9.14)

In a few cases, a *gaʿya* is marked but a simple *shewa* is written instead of *ḥaṭef pataḥ* in both L and A, e.g.

L, A: לְחֶֽנְנָ֑הּ [lɛħɛːnaˈnɔːɔh] ‘in order to favour it (fs)’ (Psa. 102.14)

L, A: הַֽלְל֖וּ [haːlaˈluː] ‘praise’ (Jer. 20.13)

L, A: וְהִתְפַּֽלְל֥וּ [vihiθpʰaːlaˈluː] ‘and pray’ (Jer. 29.7)

L, A: הַֽלְלוּ־יָֽהּ [haːlaluː-ˈjɔːɔh] ‘praise the Lord’ (Psa. 106.48)

Sporadically the *gaʿya* is omitted, though A has a *ḥaṭef pataḥ*, e.g.

A: נְגַשֲׁשָׁ֥ה [naʁaːʃaˈʃuː] ‘we grope’ (L: נְגַֽשְׁשָׁ֥ה, Isa. 59.10)

L: גֶּלְלֵ֣י [gɛːlaˈleː] ‘the dung of’ (A: גֶּֽלֲלֵ֣י, Ezek. 4.15)

L: יְהַלְלֶ֑ךָּ [jahaːlaˈlɛːɛkkʰɔː] ‘and it will praise you’ (A: יְהַֽלֲלֶ֑ךָּ, Isa. 38.18)

In the following example, the *gaʿya* is omitted in both L and A, with a *ḥaṭef pataḥ* indicating the vocalic *shewa*. There is a musical *gaʿya* on the *shewa* at the beginning of the word, which is normally associated with syllabic structures with a vocalic *shewa* before the main stress, i.e. מֽ֫פַלְפְּלִים, מֽ֫פַעֲלִים (§I.2.9.).

L, A: כְּֽגֶלֲל֣וֹ [ˌkʰa·ʁɛːlaˈloː] ‘like his dung’ (Job 20.7)

In such cases, the *ḥaṭef pataḥ* is often omitted in L, e.g.

L: יְֽהַלְל֥וּ [ˌja·haːlaˈluː] ‘they praise’ (A: יְֽהַלֲל֥וּ, Psa. 74.21)

L: יְֽהַלְל֥וּךָ [ˌja·haːlaˈluː] ‘they praise you’ (A: יְֽהַלֲל֥וּךָ, Psa. 84.5)

L: יְֽמַשְׁשׁ֥וּ [ˌja·maːʃaˈʃuː] ‘they grope’ (A: יְֽמַשֲׁשׁ֥וּ, Job 5.14)

When the word contains a musical minor *gaʿya*, in L there is often no marking of either the phonetic *gaʿya* or the *ḥaṭef pataḥ*. Likewise in A the phonetic *gaʿya* is omitted and also the *ḥaṭef*

pataḥ in some examples. As was the case with the musical *gaʿya* on *shewa*, the musical minor *gaʿya* is associated with syllabic patterns that have a vocalic *shewa* before the main stress, i.e. מִֽתְפַּעֲלִים, מֶֽתְפַּלְפְּלִים (§I.2.8.2.2.), so the marking of the minor *gaʿya* was evidently felt by the vocalizers to be sufficient to ensure that the reader read the *shewa* on the first of the two identical consonants as vocalic:[142]

L, A: וַֽיְקַלְל֖וּ [ˌva·qa̟ːlaˈluː] ‘and they cursed’ (Jud. 9.27)

L, A: וְיִֽתְהַלְל֖וּ [viˌji·θhaːlaˈluː] ‘and they will glory’ (Isa. 45.25)

L: וַֽיְהַלְלוּ֙ [ˌva·jhaːlaˈluː] ‘and they praised’ (A: וַֽיְהַֽלֲלוּ֙, 2 Chr. 29.30)

L: הִֽתְהַלְלוּ [ˌhi·θhaːlaˈluː] ‘glory!’ (A: הִֽתְהַֽלֲלוּ, Psa. 105.3)

Some early manuscripts do not mark minor *gaʿya* in a number of the forms just listed, but mark the *shewa* as vocalic either by a phonetic *gaʿya* before the *shewa* or by a *ḥaṭef pataḥ*, e.g.[143]

JTS 232/ENA 346: וְיִתְהַֽלְל֖וּ [vijiθhaːlaˈluː] (Isa. 45.25)

C: וְיִתְהַֽלֲל֖וּ [vijiθhaːlaˈluː] (Isa. 45.25)

Both phonetic *gaʿya* and *ḥaṭef pataḥ* are omitted in L and A in some words that do not have a musical *gaʿya* but which elsewhere are normally read with a vocalic *shewa*. This applies to some words that are attested in both L and A, and to some that are attested only in L, e.g.

[142] See the discussion concerning the lack of phonetic *gaʿya* in such forms in Phillips (2020).

[143] See Heijmans (2018, 99).

L, A: יְהַלְלְוּהוּ 'they praise him' (Psa. 107.32)

L: מְקַלְלֶךָ 'he who curses you' (Ecc. 7.21)

In a few cases, the vowel before the first of two identical consonants is lengthened by a retracted accent. The *shewa* was pronounced vocalic here also, as demonstrated by its being represented by a *ḥaṭef pataḥ*:

L: אַֽלְלַי לִ֗י [ˌʔaːlalaj] 'woe is me' (A: אַֽלֲלַי, Mic. 7.1)

L: הַֽלְלוּ יָ֨הּ [ˈhaːlaluː] 'praise the Lord' (A: הַֽלֲלוּ, Psa. 135.1)

In all these cases, the Karaite transcriptions represent the lengthened vowel preceding the first of the two identical consonants as long by an Arabic *mater lectionis*. This includes cases in which L and/or A do not mark a *gaʿya* or *ḥaṭef pataḥ*, e.g.

مقاللاخا [maqaːlaˈlɛːχɔː] (BL Or 2555 fol. 72v, 12 | L [BHS]: מְקַלְלֶךָ Ecc. 7.21 'he who curses you')

يهاللاكا [jahaːlaːˈlɛːɛkkɔː] (BL Or 2548 fol. 32v, 12 | L [BHS]: יְהַלְלֶךָּ, A: יְהַֽלְלֶךָּ, Isa. 38.18 'and it (msg) will praise you)'

جاللي [gɛːlaˈleː] (BL Or 2549 fol. 149r, 11 | L [BHS]: גֶּלְלֵי, A גֶּֽלְלֵי, Ezek. 4.15 'dung of')

Lengthening by retraction of the accent is likewise represented in the transcriptions, e.g.

هٰالَلُو يٰاهْ [ˈhaːlaluː ˈjɔːɔh] (BL Or 2551 fol. 99v, 1 | L [BHS]: הַֽלְלוּ יָ֨הּ׀, A: הַֽלְלוּ יָ֨הּ, Psa. 135.1 'praise!')

The manuscript I Firkovitch Evr. I B 3 (Codex Babylonicus Petropolitanus), which represents the Tiberian tradition in compound Babylonian vocalization, represents as long some vowels before a pair of identical consonants in forms that do not have a phonetic *gaʿya* in L and A, e.g.[144]

L, A: וְיִֽתְהַלְל֖וּ [viˌjiˑθhaːlaˈluː] 'and they will glory' (I Firk. Evr. I B 3 ויתהללו [vijiθhaːlaˈluː] Isa. 45.25)

The *Kitāb al-Khilaf* records some differences between Ben Asher and Ben Naftali in the lengthening of the short vowels before two identical consonants, e.g.[145]

Ben Asher: קִלְלָֽתְךָ֖ 'your curse' (Gen. 27.13)

Ben Naftali: קִֽלְלָֽתְךָ

Some differences are found across the manuscripts. In I Firkovitch Evr. I B 3, which represents the Tiberian tradition with compound Babylonian vocalization, for example, some of the vowels that are marked as long by a phonetic *gaʿya* or *ḥaṭef pataḥ* in A and/or L are represented as short, e.g.[146]

L: לְשִֽׁמְמָ֖ה [laʃiːmaˈmoː] 'into a desolation' (A לְשִֽׁמֲמָ֖ה, I Firk. Evr. I B 3 לשממה [laʃimˈmɔː], Ezek. 35.7)

[144] Cf. Heijmans (2018, 102).

[145] Ed. Lipschütz (1965, ז).

[146] Cf. Heijmans (2018, 103–4).

L: קִֽנְנ֛וּ [qi:naˈnu:] 'they nested' (A קִֽנְנ֛וּ, I Firk. Evr. I B 3 קִנְּנוּ [qinˈnu:], Ezek. 31.6)

In some cases, I Firk. Evr. I B 3 marks a *dagesh* in the following consonant, indicating explicitly that it was closed syllable:

L: מְקַלְלַֽוְנִי [maqa:laˈla:avni:] 'they curse me' (A מְקַלְלַֽוְנִי, I Firk. Evr. I B 3 מַקַּלְּלוּנִי [maqallaˈla:avni:], Jer. 15.10)

L: מְחַלְלֶ֑יךָ [maħa:laˈlɛ:χɔ:] 'those who slay you' (A מְחַלְלֶ֑יךָ, I Firk. Evr. I B 3 מַחַּלְּלֶיךָ [maħallala:χɔ:], Ezek. 28.9)

Conversely, some vowels that are short in L and A are represented as long in I Firk. Evr. I B 3, e.g.

L, A: חַלְלֵי־ [ħalle:] 'the slain of' (I Firk. Evr. I B 3 חָ֫לְלֵי [ˈħa:lale:], Isa. 22.2)

In I Firk. Evr. I B 3 this word is marked with a retracted accent (חָ֫ללי) rather than being unstressed as in L and A, which would have lengthened the vowel.[147]

I.2.5.8.4. Conjunctive *Vav*

A silent *shewa* after a word-initial conjunctive *vav* is sometimes made vocalic by lengthening the *vav* with a phonetic *gaʿya*, e.g.

L: וּֽקְרָ֔אוּ [wu:qaˈʀɔ:ʔu:] 'and read' (A וּֽקֲרָ֔אוּ, Isa. 34.16)

In such cases, A regularly marks the vocalic *shewa* with *ḥaṭef pataḥ*. A *ḥaṭef pataḥ* is sometimes marked also in L.

[147] Cf. Heijmans (2018, 102).

The marking of an Arabic *sukūn* in some transcriptions after *vav* without a *gaʿya* demonstrates that the *shewa* in such forms was pronounced silent, e.g.

> ورْعي [wuʀ̟ˈʕiː] (BL Or 2554 fol. 35r, 2 | L [BHS]: וּרְעִי֙ Cant. 1.8 'and graze!')
>
> وُقْدوش [wuq̟ˈðoːoʃ] (BL Or 2548 fol. 50v, 8 | L [BHS]: וּקְד֖וֹשׁ Isa. 41.20 'and holy of')

The reading of the *shewa* as vocalic after a lengthened *vav* separates two consonants that are relatively weak by their nature. These include sonorants, fricatives (frequently sibilants), gutturals and *qof*. The motivation, therefore, appears to have been orthoepic. Two weak consonants in contact do not constitute an optimal boundary between syllables (Vennemann 1988). They were split by a vowel to ensure that they were maximally salient:

L, A: וּֽלְצִיּ֨וֹן 'and regarding Zion' (Psa. 87.5)

L, A: וּֽקֲרָב־לִ֫בּ֥וֹ 'the war of his heart' (Psa. 55.22)

L, A: וּֽשֲׁבֵ֥ה 'and capture' (Jud. 5.12)

L, A: וּֽשֲׁבַ֣ע 'and seven' (1 Kings 14.21)

L: וּֽלֲהַבְדִּ֔יל 'and to divide' (Gen. 1.18)

L: וּֽזֲהַ֛ב 'and the gold of' (Gen. 2.12)

L: וּֽכְגַנָּ֔ה 'and like a garden' (A: וּֽכֲגַנָּ֔ה, Isa. 1.30)

L: וּֽכְכָל־כֹּחִ֞י 'as far as I was able' (A: וּֽכֲכָל, 1 Chron. 29.2)

L: וּֽכְכַלּוֹתָ֞ם 'and when they had finished' (A: וּֽכֲכַלּוֹתָ֞ם, 2 Chron. 24.14)

L: וְסְגֹר ‘and close’ (A: וְסֲגֹר, Isa. 26.20)

L: וְסְחַר־כּוּשׁ ‘and the merchandise of Ethiopia’ (A: וְסֲחַר, Isa. 45.14)

L: וְקְרָאוּ ‘and read’ (A: וְקֲרָאוּ, Isa. 34.16)

L: וְשְׁלַח ‘and send’ (A: וְשֲׁלַח, 2 Kings 9.17)

L: וְתְכַסֵּנוּ ‘and let it cover us’ (A: וְתֲכַסֵּנוּ, Jer. 3. 25)

When the vocalic *shewa* occurs before a guttural with *qameṣ*, it is represented in A and sometimes also in L by *ḥaṭef qameṣ*, reflecting the assimilation of the *shewa* to the quality of the following vowel, e.g.

L, A: וְטֳהָר־יָדַיִם ‘and clean of hands’ (Job 17.9)

L: וְסְעָדָה ‘and refresh yourself’ (A וְסֳעָדָה, 1 Kings 13.7)

L: וְצְעָקִי ‘and cry out’ (A וְצֳעָקִי, Jer. 22.20)

According to some medieval sources, the *shewa* after a *vav* with *gaʿya* is silent in some phrases consisting of words joined by *maqqef*.[148] The examples mentioned in these sources and several other cases with *maqqef* do not have *ḥaṭef pataḥ* in L or A, e.g.

L: וְדְמֵה־לְךָ [ˌwuˑðmeː-laˈχɔː] ‘make yourself similar’ (Cant. 8.14)

L, A: וְשְׁלַח־לִי [ˌwuˑʃlaˑħ-ˈliː] ‘and send me’ (1 Chron. 2.7)

L, A: וְלְכָל־בָּנֶיהָ [ˌwuˑlχɔl-bɔːˈnɛːhɔː] ‘and to all her sons’ (1 Sam. 1.4)

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[148] Dotan (1967, 258, 374), Ibn Nūḥ, *Diqduq* (ed. Khan 2000b, 36).

L, A: וְלְכָל־הַמְּקֹמֹ֖ות [ˌwuˑlχɔl-hammaqoːˈmoːoθ] ‘and to all the places’ (1 Sam. 30.31)

L, A: וְלְכָל־גִּבֹּ֖ור [ˌwuˑlχɔl-gibˈboːoʀ̟] ‘and every warrior’ (1 Chron. 28.1)

L, A: וְשְׂבַֽע־רֹֽגֶז [ˌwuˑʃvaˑʕ-ˈʀ̟oːʁɛz] ‘and full of trouble’ (Job 14.1)

The *maqqef*, however, is unlikely to be the key conditioning factor for the reading of the *shewa* as silent, since there are examples where a word with *maqqef* has a vocalic *shewa* after *vav* with *gaʿya*, e.g.

L, A: וְקְֽרָב־לִבֹּ֑ו [wuːqaʀ̟ɔːɔv-libˈboː] ‘and the war of his heart’ (Psa. 55.22)

L: וְסְחַר־כּ֜וּשׁ [wuːsaħaʀ̟-ˈkʰuːuʃ] ‘and the merchandise of Ethiopia’ (A וְֽסֲחַר, Isa. 45.14)

It appears that in those cases where the *shewa* is silent the *gaʿya* is a musical minor *gaʿya*, which requires that the syllable in which the *gaʿya* occurs be closed (§I.2.8.2.2.).[149] Minor *gaʿya* also occurs on *vav* in some cases that are single words, especially in those with a syllable structure that is suitable for minor *gaʿya*. In such cases A has a simple *shewa* sign, reflecting its reading as silent, e.g.

L, A: וְֽכְלִבְּךָ֔ [ˌwuˑχlibˈboː] ‘and according to your heart’ (2 Sam. 7.21)

L, A: וְֽבְמַגְזְרֹ֣ת [ˌwuˑvmaʁzaˈrˤoːoθ] ‘and with axes of’ (2 Sam. 12.31)

[149] Yeivin (1980, 247).

L, A: וְּבְגַלְּחוֹ֙ [ˌwuˑvʁalloˈħoː] 'and when he shaved' (2 Sam. 14.26)

Kitāb al-Khilaf mentions several differences between Ben Asher and Ben Naftali regarding the reading of the *vav* and the following *shewa* in the types of constructions discussed above. In some cases, the difference seems to be between reading a word or phrase with or without musical minor *gaʿya*. Minor *gaʿya* was, indeed, the subject of the majority of differences in *Kitāb al-Khilaf*. Examples:[150]

Ben Asher: וְּבכל חית (L: וְּבְכָל־חַיַּ֣ת 'and in every beast of' Gen. 9.10)

Ben Naftali: וּבכל חית

Ben Asher: וּבהעלות אהרן (L: וּבְהַעֲלֹ֨ת אַהֲרֹ֧ן 'and when Aaron set up' Exod. 30.8)

Ben Naftali: וְּבהעלות

In some cases, Ben Naftali read the *vav* with a phonetic *gaʿya* and the following *shewa* as vocalic where Ben Asher read *vav* without a *gaʿya* and the *shewa* as silent, e.g.[151]

Ben Asher: וּקְטרתי (L, A: וּקְטָרְתִּ֔י 'and my incense' Ezek. 16.18)

Ben Naftali: וְּקֲטרתי בפתח

In the case of the following example it appears that Ben Asher read the *vav* with a minor *gaʿya* and the *shewa* as silent

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[150] Ed. Lipschütz (1965, ה, יב).

[151] Ed. Lipschütz (1965, לה).

whereas Ben Naftali read the *vav* with phonetic *gaʿya* and the *shewa* as vocalic:[152]

Ben Asher: וּשְׂבַע רגז (L, A; וּֽשְׂבַֽע־רֹֽגֶז ‘and full of trouble’ Job 14.1)

Ben Naftali: וּשֲׂבַע

I.2.5.8.5. Elsewhere

Also in other contexts, a silent *shewa* preceded by a short vowel is sometimes converted into a vocalic *shewa* by imposing a resyllabification by lengthening the short vowel by a phonetic *gaʿya*. As in the case of *shewa* after *vav*, which was discussed in the previous section, this typically occurs where the two consonants are relatively weak, in that they are sonorants, fricatives (especially sibilants), gutturals or *qof*. The motivation, therefore, is to repair a suboptimal syllable contact, by splitting the consonants with a vowel to make them more salient and syllabifying them as onsets, i.e. CVC.C > CVV.CV.C. In A the vocalic *shewa* is generally represented by *ḥaṭef pataḥ*. The lengthened vowel before the *shewa* is in most cases *ḥireq* or *pataḥ*. In some sporadic cases it is *segol*. Examples:

L: יִֽצְֽחַק־לִֽי [jiːsˤɑħaq̟-ˈliː] ‘will laugh at me’ (Gen. 21. 6)

L: בְּשִֽׁקֲתוֹת [baʃiːq̟aˈθoːoθ] ‘in the troughs of’ (Gen. 30.38)

L: הֲתִֽמְלֹךְ [haθiːmaˈloːoχ] ‘are you a king?’ (A: הֲתִֽמֲלֹךְ, Jer. 22.15)

[152] Ed. Lipschütz (1965, נ).

L: חֲשְׁרַת־מַ֫יִם [ħaːʃaʀ̟aθ-ˈmaːjim] 'a gathering of water' (A: חֲשֲׁרַת, 2 Sam. 22.12)

L: בְּסֻבְכֵי־עֵ֫ץ [biːsavɔχ-ˈʕeːesˤ] 'in the thicket of trees' (A: no *gaʿya* בִּסֲבָךְ־עֵץ, Psa. 74.5)

L: אַֽרְזֵי־אֵֽל [ʔaːʀ̟azeː-ˈʔeːel] 'the cedars of God' (A: אֲרָזֵי, Psa. 80.11)[153]

When the vocalic *shewa* occurs before a guttural with *ḥireq*, A sometimes represents the *shewa* with a *ḥaṭef ḥireq* sign, which reflects the regular assimilation of the quality of vocalic *shewa* to that of the vowel after the guttural (§I.2.5.1.), e.g.

A: הִֽשְׁחִ֫יתוּ הִתְעִ֫יבוּ [hiːʃiˈħiːθuː hiːθiˈʕiːvuː] 'they have acted corruptly and have done abominable deeds' (L: הִשְׁחִיתוּ הִתְעִ֫יבוּ, Psa. 14.)

Examples occur in which a vocalic *shewa* before a guttural with *qameṣ* is represented by *ḥaṭef qameṣ*, likewise reflecting vowel assimilation, e.g:

L: נִבְהָ֑ל [niːvɔˈhɔːɔl] 'hastening' (A: נִבֳהָל, Prov. 28.22)

In one case a *ḥaṭef pataḥ* occurs in A before a guttural with *qameṣ*, instead of the expected *ḥaṭef qameṣ*, e.g.

A: שְׁמֲעָה 'hear!' (L שִׁמְעָה, Psa. 39.13)

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[153] Forms such וָֽאֶשָּׁאֵר אֲנִי 'and I remained' (Ezek. 9.8) and בְּמֹצַאֲכֶם 'when you find' (Gen. 32.20), in which, it seems, an original contact between two weak consonants has been split, may be related to this phenomenon.

Diqduqe ha-Ṭeʿamim (ed. Dotan, 1967, §19), however, refers to the practice of some scribes to vocalize this word with *ḥaṭef qameṣ* (שְׁמֳעָה).

The *Treatise on the Shewa* refers to the reading of the vocalic *shewa* in סַֽלְעִי ‘my rock’ (2 Sam. 22.2, Psa. 18.3) as a *ḥireq* [saːliˈʕiː].[154]

Where L has a simple *shewa* and A is not extant, the vocalic reading of the *shewa* can sometimes be established from Karaite transcriptions that mark vocalic *shewa* with an Arabic *fatḥa* vowel sign, e.g.

> مَاْمَثَقّيم [maːmaθaqˈqiːim] (BL Or 2554 fol. 65v, 1 | L [BHS]: מַֽמְתַקִּים Cant. 5.16 ‘sweet things’)

In some cases, the weak consonant with the vocalic *shewa* has lost original gemination, e.g.

L, A: וַתְּאַֽלֲצֵהוּ [vattaʔaːlaˈsˁeːhuː] ‘and he urged him’ (Jud. 16.16, < וַתְּאַלְּצֵהוּ)

L, A: כִּֽנֲרוֹת [kʰiːnaˈrˁoːoθ] ‘Chinneroth’ (Josh. 11.2, < כִּנְּרוֹת)

In many cases in the three books, A has a slanting *merkha* accent where L has a vertical *gaʿya*, e.g.

L: תִּֽבְחַר [tʰiːvaˈħaːaʀ̟] ‘you choose’ (A: תִּ֥בֲחַר, Psa. 65.5)

L: תִּֽלְעַג [tʰiːlaˈʕaːaʁ] ‘it mocks’ (A: תִּ֥לֲעַג, Prov. 30.17)

L: לִֽשְׁאוֹל [liːʃoˈʔoːol] ‘for Sheol’ (A: לִ֥שְׁאוֹל, Psa. 49.15)

L: זִֽבְחֵי [ziːveˈħeː] ‘the sacrifices of’ (A: זִ֥בְחֵי, Psa. 51.19)

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[154] Ed. Levy (1936, כה).

L: מֵֽמְתִ֑ים [miːmaˈθiːim] 'from men' (A: מְֽמֲתִ֑ים, Psa. 17.14, < מְמְּתִ֑ים)

L: אֶֽבְחַ֣ר [ʔɛːvaˈħaːaʀ̟] 'I choose' (A: אֶֽבֲחַ֣ר, Job 29.25)

L: אִֽמֲרֹ֣ות [ʔiːmaˈʀ̟oːoθ] 'the promises of' (A: אִֽמֲרֹ֣ות, Psa. 12.7)

L: אֶֽקְרָ֣א [ʔɛːq̟aˈʀ̟ɔː] 'I call' (A: אֶֽקֲרָ֣א, Psa. 18.7)

In a few cases where A has a *merkha*, an original *gaʿya* has been corrected to a *merkha* in L, e.g.

L, A: אַ֣נְשֵׁ֣י 'the men of' (L first hand: אַֽנְשֵׁ֣י, Job 34.10)

L, A: וְלִ֥שְׁכֵנַ֗י 'and to my neighbours' (L first hand: וְלִֽשְׁכֵנַ֗י, Psa. 31.12)

In the parallel passages of 2 Sam. 22 and Psa. 18, both manuscripts have *gaʿya* in the 2 Sam. 22 passage whereas in the Psa. 18 passage L has *gaʿya* and A has *merkha*:

L, A: סַֽלְעִ֣י 'my rock' (2 Sam. 22.2)

L: סַֽלְעִ֣י 'my rock' (A סַ֣לְעִ֣י, Psa. 18.3)

Examples such as these with *merkha* in A from the three books are referred to in §13 of *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967). The most satisfactory reading of this passage is the variant text that Dotan cites in the apparatus of his edition:

כל תיבה ערוכה ובמארכה ארוכה ובגרש תמוכה בפתחא משוכה

'Every word that occurs that is lengthened by *merkha* and is stressed with an accent is extended by *pataḥ*'

This, apparently original,[155] version of the rule states that in words in the three books that have a *merkha* before a *shewa* in addition to a following main accent[156] the *shewa* is read as a *pataḥ* (i.e. vocalic).[157] The passage in *Diqduqe ha-Ṭeʿamim* goes on to give four exceptions to this rule, in which the *shewa* is silent:

L: שָֽׁמְרָ֥ה נַפְשִׁ֗י [ˌʃɔːɔmˈʀ̟ɔː] 'preserve my life' (A: שָֽׁמְרָה, Psa. 86.2)

L: שָֽׁבְרָ֥ה לִבִּ֗י [ˌʃɔːɔvˈʀ̟ɔː] 'it has broken my heart' (A: שָֽׁבְרָה, Psa. 69.21)

L: טָֽמְנֽוּ־גֵאִ֨ים [ˌtˤɔːɔmˌnuː-ʁeːˈʔiːim] 'arrogant men have hidden' (A: טָֽמְנוּ, Psa. 140.6)

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[155] This formulation of the rule is cited in the *Treatise on the Shewa* (ed. Levy, 1936, יד). When discussing one of the examples, moreover, al-Fāsī uses the term *merkha*; cf. *Jāmiʿ al-ʾAlfāẓ* (ed. Skoss 1936, vol. 2, 684), which, he states, brings about 'a strengthening of the accents' (תקויה̈ ללאלחאן).

[156] The term גרש and the verbal root גר״ש is used elsewhere in *Diqduqe ha-Ṭeʿamim* as a generic term to refer to the main accent, e.g. §6, line 6 (ed. Dotan, 1967).

[157] A later version of the passage, which Dotan adopts as his preferred text, refers to *gaʿya*: כל תיבה ערוכה ובמרפא ארוכה ובגעיא תמוכה פתחא משוכה 'Every word that occurs made long with a softening (of vocalic *shewa*?) and stressed with *gaʿya* is extended by *pataḥ*'. This version cannot easily be accommodated with the exceptions to the rule listed at the end of the passage. It appears to have arisen due to the fact that many scribes, such as Jacob ben Samuel in L, marked *gaʿya* rather than *merkha* in such words.

L: יִ֑רְאַ֣ת יְהוָ֔ה [ji:ʁ̟ˈʔa:aθ] ‘the fear of the Lord’ (A: יִ֥רְאַ֣ת, Prov. 8.13)

In A all of these have *merkha* rather than *gaʿya* on the first syllable, and the rule in *Diqduqe ha-Ṭeʿamim* is referring specifically to such cases with *merkha*. The first example (A שָֽׁמְרָ֥ה, Psa. 86.2) is an imperative form with a lengthened originally short *qameṣ* after the *shin*. On account of this lengthening and the silent *shewa*, it would have been pronounced in the same way as the 3fs. past verbal form שָׁמְרָה, since this also had a silent *shewa*. Such past forms in A all have *gaʿya* on the first syllable: שָֽׁמְרָ֥ה (Psa. 119.167), שָֽׁמְרָ֥ה (Job 10.12). It is for this reason that they were not included in the exceptions, since the rule is referring only to forms with *merkha*.[158] The *merkha* evidently marks a secondary stress. The second two exceptions (A: שָֽׁבְרָ֥ה, Psa. 69.21; A: טָֽמְנ֥וּ, Psa. 140.6) are past forms. As remarked, such past forms regularly had silent *shewa* after the long vowel. The exceptional feature here, therefore, is the fact that they contain *merkha*. The fourth exception (A: יִ֥רְאַ֣ת, Prov. 8.13) is evidently listed since a

[158] *Hidāyat al-Qāriʾ* states that in some codices *gaʿya* is written slanting either to the right or to the left (Eldar 2018, 76-77). This would result in signs resembling the shapes of *ṭifḥa* and *merkha* respectively. See also short version, edition in vol. 2 of this book, §II.S.9.0. Moreover, *gaʿya* is sometimes referred to as *maʾarikh* in some sources (Wickes 1887, 24; Ben-David 1957b, 390–91). Given the exclusion of the forms שָֽׁמְרָ֥ה (Psa. 119.167) and שָֽׁמְרָ֥ה (Job 10.12) from the list of exceptions to the rule discussed by *Diqduqe ha-Ṭeʿamim*, however, it appears that the discussion concerns the accent *merkha*.

merkha occurs on an originally short *ḥireq* without the *shewa* being made vocalic as happens elsewhere.

Kitāb al-Khilaf reports differences between Ben Asher and Ben Naftali with regard to the occurrence of phonetic *gaʿya* and the reading of *shewa* in forms of the type discussed in this section, e.g.[159]

Ben Asher: כִּקְסם שוא (L: כִּקְסָום־שָׁ֑וְא ‘like a false divination’ Ezek. 21.28)

Ben Naftali: כִּֽקְסם שוא

In some cases, manuscripts with compound Babylonian vocalization that represent the Tiberian reading tradition such as I Firk. Evr. I B 3 mark a vowel as short where L and A have a *gaʿya*, e.g.

L, A: סִֽבְכֵ֣י [siːvaˈχeː] ‘the thickets of’ (I Firk. Evr. I B 3 סִבְכֵי [sivχeː] Isa. 10.34)

I.2.5.9. Marking of *Shewa* at the End of a Word

The *shewa* sign marks a vowelless consonant in the coda of a syllable in the middle of a word, but a vowelless consonant at the end of a word is generally not marked by a *shewa* sign, e.g.

בְּרֵאשִׁ֖ית [baʀ̟eːˈʃiːiθ] ‘in the beginning’ (Gen. 1.1)

אֱלֹהִ֑ים [ʔɛloːˈhiːim] ‘God’ (Gen. 1.1)

הָאָֽרֶץ [hɔːˈʔɔːʀ̟ɛsˤ] (Gen. 1.1).

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[159] Ed. Lipschütz (1965, לה).

In the following circumstances, however, a *shewa* sign occurs on the final consonant of a word.

I.2.5.9.1. In Word-final Consonantal Clusters

When a word ends with a cluster of two vowelless consonants, both consonants are marked with a *shewa* sign, e.g.

L: וַיֵּבְךְּ [vaɟˈɟeːevk] 'and he wept' (Gen. 45.15)

L: וַיִּשְׁבְּ [vaɟˈɟiːiʃb] 'and he captured' (Num. 21.1)

L: וַיֵּשְׁתְּ [vaɟˈɟeːeʃtʰ] 'and he drank' (Gen. 9.21)

L: יַפְתְּ [ˈjaːaftʰ] 'may he enlarge' (Gen. 9.27)

L: וַיִּפְתְּ [vaɟˈɟiːiftʰ] 'and [my heart] has been enticed' (Job 31.27)

L: וְיֵרְדְּ [viˈjeːeʀ̟d] 'and may he have dominion' (Psa. 72.8)

L: נֵרְדְּ [ˈneːeʀ̟d] 'nard' (Cant. 4.14)

L: יַרְדְּ [ˈjaːaʀ̟d] 'he causes him to dominate' (Isa. 41.2)

L: אַל־תּוֹסְףְּ [ʔal-ˈtʰoːospʰ] 'do not add' (Prov. 30.6)

L: וַתַּשְׁקְ [vatˈtʰaːaʃq̟] 'and she gave to drink' (Gen. 21.19)

L: וַיַּשְׁקְ [vaɟˈɟaːaʃq̟] 'and he watered' (Gen. 29.10)

L: קֹשְׁטְ [ˈq̟oːoʃtˤ] 'truth' (Prov. 22.21)

L: יֵשְׂטְ [ˈjeːeʃtˤ] 'let [not your heart] turn aside' (Prov. 7.25)

As can be seen, such word-final clusters have falling sonority, in that the first consonant is sonorant or fricative and the second an obstruent. The Tiberian Masoretic sources state that

both *shewas* at the end of such words were silent.[160] According to some western medieval sources, the final *shewa* was vocalic in such words when they were not in major pause.[161]

In a number of manuscripts, including some of the earliest model codices, the *shewa* is marked on the final consonant in words of this structure only when it is a בגדכפת consonant with *dagesh* but is omitted in final *qof* or *ṭet*, e.g.[162]

וַתַּ֖שְׁק (A, S, Gen. 29.10)

יֵ֣שְׂט (Parma di Rossi 3214 [1278 C.E.], Prov. 7.25)

This practice of omission of the *shewa* by some scribes is referred to in the *Treatise on the Shewa*, where all the examples cited have final *ṭet* or *qof*:

> It is the practice of some people (to mark *shewa*) under other letters at the end of words like וַיַּ֫שְׁקְ ‘and he watered’ (Gen. 29.10, etc.), אַל־יֵ֣שְׂטְ ‘let it not turn aside’ (Prov. 7.25), and like לְהוֹדִֽיעֲךָ֗ קֹ֭שְׁטְ ‘to inform you of the truth’ (Prov. 22.21) …. All of these do not have a function and they are not necessary. They are only for embellishment so that the

[160] *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.2.12.14.; short version, edition in vol. 2 of this book, §II.S.5.12; and earlier Masoretic treatises, e.g. Allony and Yeivin eds. (1985, 92–93)

[161] Cf. Chomsky (1952, 16–17).

[162] Shashar (1983, 22), Ofer (1989, 318; 1993, 113–14).

letters do not remain bare of pointing, and some people do not mark them.[163]

In the following examples an original word-final cluster of a *ḥet* and a plosive *dalet* has been split by an epenthetic vowel:

L: וַיִּ֣חַדְ [vaɟˈɟiːħad] 'and he rejoiced' (Exod. 18.9)

L: אַל־יִ֭חַדְ [ʔal-ˈjiːħad] 'let it not rejoice' (Job 3.6)

The *dalet* remains plosive, despite the preceding vowel, indicating that the *ḥet* must originally have been vowelless and the epenthetic vowel was inserted at a late period after the rule of fricativization of בגדכפת consonants following vowels had ceased to operate. The *shewa* is marked on the final *dalet* by analogy with the vocalization of words with clusters such as וַיֵּ֣רֶדְ, etc. Segolate forms with a medial *ḥet* such as יַ֫חַד 'together' (2 Sam. 14.16), פַּ֣חַד 'fear' (Job 4.14) and שֹׁ֫חַד 'bribe' (Deut. 10.17), by contrast, have an epenthetic before the *dalet* that must have been inserted at an earlier period, when the בגדכפת fricativization rule was still operating.

I.2.5.9.2. Before a Final *ʾAlef* in the Orthography

When a consonant that closes a syllable at the end of a word is followed by an *ʾalef* that is not read as a consonant or vowel letter, a *shewa* sign is placed on this consonant, e.g.

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[163] וקד יעמלון קום תחת אחרף אכר פי אכר אלתאבות מתל וַיֵּשְׁקְ אל יֵשְׁטְ ומתל להודיעך קֹשְׁטְ ... והדה כלהא ליס תפעל שי ולא תחתאג אליהא ואנמא הי ללתחסין לילא תבקא אלאחרף עריאנה מן אלנקט ובעצׄהם לא יעמלהא (ed. Levy. 1936, כח, and CUL Or 1080.13.3.2, fol. 2r).

L: בַּגַּיְא [bagˈgaːaj] ‘in the valley’ (Deut. 4.46)

L: שָׁוְא [ˈʃɔːɔv] ‘emptiness’ (Exod. 23.1)

L: וַיַּרְא [vaɟˈɟaːaʀ̟] ‘and he saw’ (Gen. 1.10)

L: חֵטְא [ħeːetˤ] ‘sin’ (Lev. 19.17)

The purpose of marking the *shewa* on the penultimate letter and omitting it on the final *ʾalef* was to ensure correct reading, alerting the reader to the fact that only the penultimate letter should be read. This contrasts with vocalizations such as וַיֵּשְׁבְּ, in which the final letter was read.

The common spelling of the name ‘Artaxerxes’ exhibits a word-final consonant cluster followed by an *ʾalef* that is not read:

L: אַרְתַּחְשַׁסְתְּא [ʔaʀ̟tʰaħˈʃaːastʰ] (Ezr. 8.1)

Here there is a difference between *qere* and *ketiv*, whereby the *ketiv* represents a reading with a final vowel, as attested in Ezr. 4.7: אַרְתַּחְשַׁשְׂתָּא (Ezr. 4.7), and the *qere* is a reading without the final vowel, as attested in the *qere* note to the second occurrence of the name in Ezr. 4.7: אַרְתַּחְשַׁשְׂתְּא, ק׳ שת, i.e. the correct orthography of the *qere* ends in שְׂתְּ, without final א. Throughout the rest of the book of Ezra the name is written אַרְתַּחְשַׁשְׂתְּא or אַרְתַּחְשַׁסְתְּא, without a *qere* note, but the vocalization is still clearly intended to correspond to an orthography without a final *ʾalef*. The vocalization, therefore, corresponds to that of a word with a final cluster such as וַיֵּשְׁבְּ. This should be distinguished from vocalizations such as חֵטְא, in which the final *ʾalef* is considered part of the appropriate orthography of the word, although

not pronounced. The *shewa* would, therefore, occur on a vowelless consonant in the middle of the orthographic word, which follows normal vocalization practice.

In Biblical Aramaic, a vocalization similar to that of אַרְתַּחְשַׁסְתְּא/אַרְתַּחְשַׁשְׂתְּא is found before a final *he* that is not read in the word אֲנְתְּה 'you (ms)' (Dan. 2.29). Here again, the vocalization corresponds to that of an orthography without a final vowel letter.

In L a *shewa* is marked on the word-final *yod* in בַּגַּיְ 'in the valley' (A בַּגַּי, Deut. 34.6) by analogy with the normal orthography with final *ʾalef* גַּיְא.

I.2.5.9.3. Second Person Feminine Singular Pronominal Suffix

When the *tav* of the 2fs verbal suffix follows a consonant with silent *shewa* and is pronounced as a stop, a *shewa* sign is marked under the suffix, e.g.

L: וְיֹלַ֫דְתְּ [vijoːˈlaːaðtʰ] 'and you shall bear [a son]' (Gen. 16.11)

L: צָחָ֫קְתְּ [sˤɔːˈħɔːɔq̟tʰ] 'you (fs) laughed' (Gen. 18.15)

L: וְאָמַ֫רְתְּ [vɔʔɔːˈmaːaʀ̟tʰ] 'and you (fs) will say' (Jud. 4.20)

L: לִקַּ֫טְתְּ [liq̟ˈq̟aːatˤtʰ] 'you gleaned' (Ruth 2.19)

L: וְהָלַכְתְּ [vɔhɔːˈlaːaχtʰ] 'and you should go' (Ruth 2.9)

This is analogous to the marking of *shewa* on the final consonant in clusters in words such as וַיֵּ֫שְׁתְּ and וַיִּ֫שְׁבְּ (§I.2.5.9.1.) except that clusters ending in the *tav* of the 2fs suffix regularly oc-

cur in verbs ending in a strong consonant and they are not restricted to clusters with falling sonority, as shown by cases such as לִקַּטְתְּ. It is possible that the practice of marking a *shewa* on a final consonant in all contexts originated in the 2fs plosive verbal suffix and the primary motivation for this was to distinguish it clearly from the 2ms verbal suffix -תָּ. It was then extended to word-final root consonants with *dagesh*, probably first to *tav* in forms such as וַיֵּ֥שְׁתְּ, and subsequently elsewhere, in forms such as וַיֵּ֥שְׁבְּ and וַיִּ֣חַדְּ. Finally, it was extended to other word-final consonants in clusters, as in וַתַּ֥שְׁקְ, by analogy with forms such as וַיֵּ֥שְׁבְּ.[164]

The form וְיֹלַ֣דְתְּ 'and (you) will give birth to' (Gen. 16.11) should be interpreted as a feminine singular participle (equivalent to יֹלֶ֫דֶת), and so the final *tav* is the feminine nominal inflection rather than a verbal suffix. In יֹשַׁבְתְּ֙י 'dwelling in' (Jer. 22.23) and מְקֻנַּ֣נְתְּי 'nested' (Jer. 22.23), which are likewise participles, there is a difference between *ketiv* and *qere*, the final *yod* being the orthography of the *ketiv* but not read in the *qere*.

When the 2fs suffix follows a vowel in a final weak verb, the *tav* is fricative and is not marked with *shewa*, e.g.

L: עָשִׂ֑ית [ʕɔːˈsiːiθ] 'you have done' (Gen. 3.13)

L: וְשָׁתִ֕ית [vaʃɔːˈθiːiθ] 'and you should drink' (Ruth 2.9)

L: וְצָמִ֗ת [vasˁɔːˈmiːiθ] 'and [when] you are thirsty' (Ruth 2.9)

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[164] For this argument see Ofer (1993, 115-117).

Sporadically in L, however, a *shewa* is marked on a final fricative 2fs suffix in weak verbs, by analogy with the marking of the *shewa* on the suffix in strong verbs, e.g.

L: הָיִ֣יתְ [hɔːˈjiːiθ] 'you were' (A הָיִ֣ית, Jud. 11.35)

L: וְהָיִ֤יתְ [vɔhɔːˈjiːiθ] 'and you shall be' (A וְהָיִ֤ית, Isa. 62.3)

This is found more regularly in some other early manuscripts, e.g.

S: בָ֫אתְ [vɔːɔθ] 'you have come' (L: בָ֫את, Gen. 16.8)[165]

II Firk. Evr. II B 94: וְשָׁתִ֕יתְ [vaʃɔːˈθiːiθ] 'and you will drink' (L: וְשָׁתִ֕ית, Ruth 2.9)[166]

In the early model manuscript codex known as C3, *shewa* signs that were originally marked on several cases of fricative *tav* were erased by Mishaʾel ben ʿUzziʾel, who corrected the manuscript in many places. This suggests that the marking of *shewa* on a fricative 2fs suffix was an earlier layer of tradition.[167]

In manuscripts with Babylonian vocalization, the *tav* of the suffix after vowels in final-weak verbs is generally fricative, as in Tiberian, but there is an isolated case of it being marked with *dagesh* in an Old Babylonian (OB) manuscript (Yeivin 1985, 350). This reflects its pronunciation as a stop by analogy with the form of the suffix on strong verbs:

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[165] Cf. Shashar (1983, 22).

[166] Cf. Yeivin (1968, 370).

[167] For this manuscript and the correction work of Mishaʾel ben ʿUzziʾel see Penkower (1989). For the erasure of the *shewa* signs see Ofer (1993, 116).

יָפִ֫ית֮ [jɔːfiːtʰ] 'you are beautiful' (L [BHS]: יָּפִית, Cant. 7.7)

In verbs with final guttural radicals a late insertion of an epenthetic vowel has occurred before the final suffix leaving the *tav* a stop, similarly to the process we have seen above in the form וַיִּ֣חַדְּ (Exod. 18.9), e.g.

L: יָדַ֫עַתְּ [jɔːˈðaːʕatʰ] 'you (fs) know' (1 Kings 2.15)

L: יָגַ֫עַתְּ [jɔːˈʁaːʕatʰ] 'you have laboured' (Isa. 62.8)

L: שָׁכַ֫חַתְּ [ʃɔːˈχaːħatʰ] 'you have forgotten' (Isa. 17.10)

L: הֻמְלַ֫חַתְּ [humˈlaːħatʰ] 'you were [not] rubbed with salt' (Ezek. 16.4)

The *shewa* sign is marked on the *tav* by analogy with verbs with a final strong radical, such as וְהָלַ֫כְתְּ (Ruth 2.9), etc. The *dagesh* in the *tav* indicates that the consonant was a stop. It was an ungeminated stop and the *dagesh* was read as a *dagesh lene*. This is shown by Karaite transcriptions that mark geminated consonants with an Arabic *shadda* sign but omit the *shadda* on בגדכפת consonants with *dagesh lene*, e.g.

سابٍاعت [sɔːˈvɔːɔʕatʰ] (BL Or 2549 fol. 234r, 5 | L [BHS]: שָׂבָ֫עַתְּ Ezek. 16.29 'you were [not] satisfied')

It should be noted that in this manuscript the *shewa* is omitted on the *tāʾ* transcribing the *tav*.

The plosive *tav* and vocalization with *shewa* of the 2fs independent pronoun אַתְּ (in pause אָתְּ, e.g. Gen. 12.11)[168] has, likewise, arisen be analogy with the form and vocalization of the 2fs suffix on strong verbs. As is the case with the *dagesh* in the suffixes, the *dagesh* in the independent pronoun אַתְּ was read as *dagesh lene* and the *tav* was not geminated.[169] The lack of gemination is shown by Karaite transcriptions that mark geminated consonants with Arabic *shadda*. In these manuscripts, the *shadda* sign is not marked on the *tāʾ* that transcribes the *tav*, e.g.

> بِث-مِي أٰاتِ هِجّيذى [baθ-ˈmiː ˈʔaːatʰ hagˈgiːðiː] (BL Or 2544, fol. 10r, 3 | L [BHS]: בַּת־מִ֥י אַ֖תְּ הַגִּ֣ידִי Gen. 24.23 'tell whose daughter you are')

The reading of אַתְּ with ungeminated *tav* is found also in modern oral reading traditions that distinguish between geminated and ungeminated consonants.

In the Karaite transcriptions, the *shewa* sign is sometimes omitted on the *tāʾ* that transcribes the *tav* of אַתְּ, e.g.

> وِات [vaˈʔaːatʰ] (BL Or 2549 fol. 226r, 1 | L [BHS]: וְאַ֕תְּ Ezek. 16.7 'and you')

[168] In L the *shewa* is omitted in אָת (Ruth 3.9).

[169] Some reference grammars, such as Bergsträsser (1918, 141), Bauer and Leander (1922, 219–20), erroneously claim that the final *tav* of the independent 2fs pronoun was geminated by analogy with the 2ms independent pronoun אַתָּה. The analogy, however, was with the 2fs verbal suffix, which was not geminated.

أَت ['ʔaːatʰ] (BL Or 2549 fol. 238v, 2 | L [BHS]: אַ֫תְּ Ezek. 16.45 'you')

A similar type of vocalization is found in the 2fs suffix conjugation of the verb נת״ן 'to give', e.g.

L: נָתַ֫תְּ 'you (fs) gave' (Ezek. 16.36)

In contrast to the independent pronoun אַתְּ, the final *tav* in this form was pronounced geminate, as demonstrated by Karaite transcriptions, e.g.

נَاثَاتّْ [nɔːˈθaːattʰ] (BL Or 2549 fol. 235r, 2 | L [BHS]: נָתַ֫תְּ Ezek. 16.36 'you (fs) gave')

This form, therefore, had a final consonant cluster.

I.2.5.9.4. Final Kaf

A *shewa* sign is regularly written on a vowelless word-final *kaf*, e.g.

L: וְחֹ֖שֶׁךְ 'and darkness' (Gen. 1.2)

L: וַיְבָ֧רֶךְ 'and he blessed' (Gen. 1.22)

L: בְּת֣וֹךְ 'within' (Gen. 2.9)

This practice is likely to have originated as a means of clearly distinguishing the 2fs possessive suffix from the 2ms possessive suffix, both of which are written without a final vowel letter, e.g.

L: אָחִ֔יךְ 'your (fs) brother' (2 Sam. 13.7)

L: אָחִ֑יךָ 'your (ms) brother' (2 Sam. 2.22)

The marking of the *shewa* was then extended to all occurrences of final *kaf*. This explanation is found already in the *Mikhlol* of David Qimḥi (1160–?1235):[170]

> But the *kaf* of the feminine pronoun, as in יָדֵךְ 'your (fs) hand', רַגְלֵךְ 'your (fs) leg', עֵינֵךְ 'your (fs) eye', אָזְנֵךְ 'your (fs) ear', is pointed with *shewa* since there is a possibility of erring and reading *qameṣ*, although a soft letter (i.e. *mater lectionis*) is not written after it. Therefore, they always pointed the *kaf* that designated the feminine with *shewa*. In conformity with the way they customarily pointed this *kaf* they regularly pointed also a root letter *kaf* at the end of a word, as in שֶׁפֶךְ 'pouring', חֹשֶׁךְ 'darkness', דֶּרֶךְ 'way'. The *kaf* in these are the like the *resh* of אָמַר and the *lamed* of אָכַל, but they did not point the *resh* and the *lamed* whereas they pointed the *kaf* (with *shewa*).[171]

I.2.5.9.5. Further Cases in L

In L there are two cases where a *shewa* sign is marked at the end of a word that is linked to the following word by *maqqef* and does not fall into any of the categories mentioned above:

L: הֲדַדְ־רִמּ֥וֹן 'Hadadrimmon' (A, C: הֲדַד־רִמּ֥וֹן, Zech. 12.11)

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[170] Cf. Ofer (1993).

[171] David Qimḥi, *Mikhlol* (ed. Rittenberg, 1862, 139b), Chomsky (1952, 17): אבל כ״ף כינוי הנקבה כמו יָדֵךְ רַגְלֵךְ עֵינֵךְ אָזְנֵךְ ינקדו בשו״א כי יש דרך לטעות בו שתקרא קמץ אע״פ שאין אות נחה כתובה אחריה לפיכך נקדו הכ״ף סימן הנקבה בשו״א לעולם ולפי שהרגילו בנקידת זאת הכ״ף נקדו ג״כ הכ״ף השרשית בשאחרית המלה לעולם כמה שֶׁפֶךְ חֹשֶׁךְ דֶּרֶךְ הנה הכ״ף בהם כמו רי״ש אָמַר ולמ״ד אָכַל ולא נקדו הרי״ש והלמ״ד ונקדו הכ״ף.

L: קָבָלְ־עָֽם 'in front of the people (?)' (A: קָבָל־עָֽם, 2 Kings 15.10)

I.2.5.9.6. Non-Standard Tiberian Manuscripts

Many manuscripts with Non-Standard Tiberian vocalization exhibit patterns of occurrence of *shewa* on word-final letters that can be regarded as further extensions of the principles of marking *shewa*.

In some manuscripts with Non-Standard Tiberian vocalization, a *shewa* sign is marked regularly on the fricative *tav* of the 3fs verbal suffix, e.g.

בָּ֣אתְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: בָּ֣את Ruth 2.12 'you have come')

וְגִּלִּ֧יתְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: וְגִלִּ֧ית Ruth 3.4 'and you will uncover')

וְצָֽמִתְ (T-S A12.1, Blapp 2017, 80 | L [BHS]: וְצָמִ֗ת Ruth 2.9 'and [when] you are thirsty')

The *shewa* is often written on a word-final guttural consonant that is preceded by a vowel, especially *ḥet* and *ʿayin* (§I.1.8., §I.1.16.), e.g.

וַתִּשְׁכַּ֣חְ (T-S A11.1, Blapp 2017, 48 | L [BHS]: וַ֭תִּשְׁכַּח Job 39.14 'and she forgot')

וַיִּבְרַ֣חְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וַיִּבְרַ֥ח 1 Kings 11.40 'and he fled')

הוֹדַ֑עְ (T-S A13.18, Blapp 2017, 127 | L [BHS]: הוֹדַ֑ע Psa. 90.12 'teach!')

וַיִּשְׁמַ֫עְ (Codex Reuchlinianus, Morag 1959, 233 | L [BHS]: וַיִּשְׁמַ֫ע 2 Sam. 22.7 'and he heard')

אלֹוהְ (T-S A11.1, Blapp 2017, 47 | L [BHS]: אֱלֹ֫והַּ Job 39.17 'God')

יַגִּיהְ (Codex Reuchlinianus | L [BHS]: יַגִּ֫יהַּ Isa. 13.10 '[does not] give light')

The purpose of the *shewa* here appears to be to ensure that the weak guttural letter was read and not slurred over. It marks explicitly that the letter closes a syllable, and is therefore consonantal.

Similarly, *shewa* in Non-Standard Tiberian manuscripts is often marked on final consonantal *vav* that is preceded by a vowel, to ensure that they are read as consonantal (§I.1.6.), e.g.

עָלָיוְ (T-S A13.18, Blapp 2017, 125 | L [BHS]: עָלָ֫יו Psa. 89.46 'on him')

וְשׁוּלָיוְ (Codex Reuchlinianus, Morag 1959, 219 | L [BHS]: וְשׁוּלָ֫יו 'and his train' Isa. 6.1)

Some Non-Standard Tiberian manuscripts occasionally mark *shewa* on other word-final consonants that are preceded by a vowel and not in clusters, e.g.

אֱנוֹשְׁ (JTS ENA 2640 f. 11, Díez Macho 1971, 293-4 | L [BHS]: אֱנוֹשׁ Psa. 10.18 'man')

בְהֶכָלְ (JTS ENA 2640 f. 11, Díez Macho 1971, 293-4 | L [BHS]: בְּהֵיכַ֫ל Psa. 11.4 'in the temple of')

אַשֻּׁורְ (JTS ENA 2118 f. 14, Murtonen 1961, 55 | L [BHS]: אַשּׁ֫וּר Isa. 20.6 'Ashur')

כְּמוֹפֵ֫תְ (T-S A13.20, Blapp 2017, 155 | L [BHS]: כְּ֭מוֹפֵת Psa. 71.7 ‘like a sign’)

In a number of Non-Standard Tiberian manuscripts of non-biblical texts vocalizers have marked *shewa* on all word-final consonants, e.g. in the liturgical text Maḥzor Vitry: רַבְ, אֶחַדְ, מְעַטְ, נִגְאַלְ, עֲבַדִימְ (Eldar 1975, 194).

In some Non-Standard Tiberian biblical manuscripts *shewa* is marked on word-final *he* and *ʾalef* that are *matres lectionis* and are not realized as consonants, e.g.

שָׁבְרָ֣הְ (T-S A13.20, Blapp 2017, 156 | L [BHS]: שָׁ֥בְרָ֣ה Psa. 69.21 ‘has broken’)

חוּשָׁ֣הְ (T-S A13.20, Blapp 2017, 156 | L [BHS]: ח֖וּשָׁ֑ה Psa. 70.6 ‘hasten’)

לָבוֹאְ (T-S A13.20, Blapp 2017, 156 | L [BHS]: לָ֭בוֹא Psa. 71.3 ‘to come’)

It seems that this practice arose by extending the use of *shewa* that marks syllable closure to letters that are pronounced as vowels without consonantal realization. A similar development is attested in Non-Standard Tiberian manuscripts in the use of *mappiq* on *he* and *dagesh* on *ʾalef*, which are in some cases extended from marking consonantal *he* and *ʾalef* to the marking also of *matres lectionis he* and *ʾalef* (§I.1.1., §I.1.5.). This type of extension of the marking of *shewa* is sometimes applied also to word-internal *matres lectionis*, e.g.

חָטָ֫אְנוּ (T-S NS 18.5, Arrant 2020 | L [BHS]: חָטָֽאנוּ Num. 14.40 ‘we have sinned’)

מְלַאְכְּתּ֑וֹ (T-S A22.54, Khan 1991, 855 | L [BHS]: מְלַאכְתּ֑וֹ Gen. 2.2 'his work')

וַתְּ֑אְמֶר (T-S A22.54 | L [BHS]: וַתֹּ֖אמֶר Gen. 3.2 'and she said')

דַּלִּ֑ים (T-S A12.1, Blapp 2017, 80 | L [BHS]: דַּלִּ֑ים Prov. 29.14 'the poor')

לֵאְמֹר (T-S AS 8.123, Arrant 2020 | L [BHS]: לֵאמֹר Lev. 24.1 'saying')

Such a marking of *shewa* on word-internal *matres lectionis* has been identified in manuscripts of European provenance containing non-biblical Hebrew texts with a Non-Standard Tiberian type of vocalization, e.g. מִכַּאְן, צֹאְנְךָ, מְלֶאְכֶת, מָצָאְתִי, רֵאְשִׁית, לֵאְמוֹר.[172] In some European manuscripts, *mater lectionis* ʾ*alef* is marked by *ḥaṭef pataḥ* instead of *shewa*, e.g. בָּאֲתִי, רִאֲשׁוֹן, רָאֲשֵׁי.[173] This is unlikely to reflect a consonantal realization of the ʾ*alef* but rather has arisen by analogy with the use on *matres lectionis* of the *shewa* sign, which alternates with *ḥaṭef pataḥ* in other contexts.

Another Non-Standard Tiberian vocalization practice found in non-biblical texts is to mark *shewa* on a consonant preceding a *mater lectionis* that is marked by a vowel sign. This is found before *shureq*, which is always marked on *mater lectionis vav*, e.g. in Mishnaic texts: הַמְּוּבְחָר, אָבָדְוּ (Sharvit 1968, 24), and also before other *matres lectionis* on which a vowel is marked contrary to the standard Tiberian system, e.g. כְּאַן (Bar-Asher 1980, 48). Alternatively, when the *mater lectionis* has a vowel sign, the preceding

[172] Eldar (1975, 195; 1978, 68–69), Bar-Asher (1980, 48).

[173] Eldar (1978, 69), Beit-Arié (1965, 38).

consonant is sometimes also marked with a vowel sign, e.g. כָּאָן, וּבַצֹּאן, בְּצֵאֵתִי.[174]

I.2.6. Syllabification and Metrical Structure of Word-final Syllables

The syllable structure of words with final consonantal clusters such as וַיֵּ֫בְךְּ 'and he wept' (Gen. 45.15), וַיִּ֫שְׁבְּ 'and he captured' (Num. 21.1) and לִקַּ֫טְתְּ 'you gleaned' (Ruth 2.19) can be analysed as having extra-syllabic consonants. These would have the underlying structure /vaj.jev.k/, /vaj.jiʃ.b/ and /liq̟.q̟atˁ.t/, in which the final consonant of the cluster at the periphery of the word is extrasyllabic. This can be compared to the analysis of the underlying syllable structure of a word such as קוֹל as /q̟ō.l/ with an extrasyllabic final consonant (§I.2.4.). In both cases the extra-syllabicity of the final consonant is conditioned by the fact that a syllable should not have more than two morae. Words with final consonant clusters such as /vaj.jev.k/, /vaj.jiʃ.b/ and /liq̟.q̟atˁ.t/ have in their final syllables a vowel without inherent length. On the phonetic level, however, the final vowel would be lengthened by stress and so it would split into a CV̄.VC structure with an epenthetic vowel after the long vowel, as is the case with /q̟ō.l/ [ˈq̟oːol] and /lev/ [ˈleːev], viz. [vaɟ.ˈɟeː.ev.k], [vaɟ.ˈɟiː.iʃ.b] and

[174] Eldar (1975, 195), Bar-Asher (1980, 48). These three types of double vocalization of vowels marked by *matres lectionis* are also found in medieval Judaeo-Arabic texts that are vocalized with Tiberian vowel signs, see Khan (1992a).

[liq̟.ˈq̟aːatˤ.t]. The consonant on the word-final periphery would remain extrasyllabic at the phonetic level.

As is the case with words such as [ˈq̟oːol] and [ˈleːev], on the level of metrical parsing the unstressed epenthetic in words such as [vaɟ.ˈɟeː.ev.k], [vaɟ.ˈɟiː.iʃ.b] and [liq̟.ˈq̟aːatˤ.t] would belong together with the preceding long vowel in a trochaic foot. The final consonant can be considered to have been extrametrical:

[vaɟ. ˈɟeː.ev.k]

(*) (ˈ* .)

Word-final extrasyllabic consonants can be posited to exist also in segolate forms, e.g. מֶ֫לֶךְ [ˈmɛː.lɛχ] 'king', סֵ֫פֶר [ˈseː.fɛʀ̟] 'book', קֹ֫דֶשׁ [ˈq̟oː.ðɛʃ] The underlying forms of these would be /mɛl.χ/, /sef.r/, /qoð.ʃ/, and the final extrasyllabic consonant would be syllabified by an epenthetic on the phonetic level.[175] As is the case with other epenthetics, we should assume that these epenthetics did not stand in an independent foot. They would be analogous to the epenthetic of words such as [ˈq̟oː.ol] and be weak syllables bound prosodically to the previous strong syllable in a trochaic foot:

/mɛl.χ/

[ˈmɛː.lɛχ]

(ˈ* .)

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[175] Such underlying representations without the epenthetic vowel are adopted in analyses of Tiberian Hebrew made within the framework of generative phonology and optimality theory, e.g. Prince (1975), Greenstein (1992), Malone (1993), Coetzee (1999), Edzard (2013).

The vowel in the underlying syllable structure /mɛl.χ/ is short. After the insertion of the epenthetic, it has become lengthened. A stressed vowel would have been lengthened. A further factor that brought about this lengthening is likely to have been a metrical constraint on having a sequence of a light CV syllable and a following weak epenthetic syllable.

A similar analysis would apply to forms such as אַל־יִ֫חַדְּ ‘let it not rejoice’ (Job 3.6) and שָׁכַ֫חַתְּ ‘you (fs) have forgotten’ (Isa. 17.10), which also end in trochaic feet:

/jiħ.d/	/ʃɔːχaħ.t/
[ˈjiː.ħad]	[ʃɔːˈχaː.ħat]
(ˈ* .)	(*) (ˈ* .)

Some nouns that derive historically from a *CVCC pattern have stress on the syllable containing the vowel that breaks the final cluster. This applies, for example, to nouns with a medial *ʾalef*, e.g.

בְּאֵר	‘well’	< **biʾr*
זְאֵב	‘wolf’	< **ðiʾb*
בְּאֹשׁ	‘stench’	< **buʾš*

In such forms an original epenthetic takes the main stress. The original short lexical vowel is left without stress and comes to be in a metrically weak CV syllable, and so is represented by *shewa*. Since the second vowel is stressed it should be assumed that, although originally an epenthetic, it has become reanalysed as a lexical vowel in the underlying form of the word:

**biʾr* > בְּאֵר [beˈʔeːeʀ̟] /bʔe.r/

This process of shifting the stress to the epenthetic is regular with medial-*ʾalef* nouns, in which it may have been motivated by an effort to preserve the weak *ʾalef*. By making the *ʾalef* the onset of a strong stressed syllable of a foot, i.e. בְּאֵ֫ר [beˈʔeːeʀ] (. ˈ* .) rather than of a weak unstressed syllable of a foot, as in מֶ֫לֶךְ [ˈmɛː.lɛχ] (ˈ* .) the articulation of the *ʾalef* is strengthened. The same orthoepic metrical principle is likely to have given rise to the *ṣere* on initial *ʾalef* in forms such as אֵזוֹר 'girdle' and אֵבוּס 'crib', which have a קְטוֹל and קְטוּל morphological pattern respectively. The *ʾalef* with *ṣere* is a metrically strong syllable (*), whereas an *ʾalef* with *ḥaṭef segol*, which would have been expected according to the morphological pattern, would have been a metrically weak syllable. The same explanation holds for the vocalization of *ʾalef* with *ṣere* in verbal forms such as תֶּֽאֵהֲב֣וּ 'you love' (Prov. 1.22), where a *ḥaṭef segol* would be expected (cf. תֶּֽאֱהָ֑בוּ Zech. 8.17). Note also the form תְּֽאָכְלֵ֑הוּ 'it consumes him' (Job 20.26), where this process has preserved the *ʾalef*, which is normally weakened and after prefixes (cf. יֹאכְלֻ֗הוּ Isa. 62.9 'they will eat it').

Stress shifts to the epenthetic syllables also in many nouns with a final weak radical, e.g.

פְּרִי	'fruit'	< **pary*
גְּדִי	'kid'	< **gady*
בְּכִי	'weeping'	< **baky*

In such cases, the motivation for the stress shift appears to be that the long vowel created by the combination of the epenthetic and the final weak radical was favoured for stress placement over the short vowel in the first syllable.

Clusters of two consonants on the phonetic level occur in principle on word peripheries. This includes the word-final periphery, as in the forms discussed above, and the word-initial periphery, as in the isolated case of the numeral 'two' שְׁתַּיִם / שְׁתֵּי, in which the *shewa* is silent: [ˈʃtaːjim], [ˈʃteː]. As with word-final clusters, the initial consonant of the word-initial cluster in this word can be analysed as extrasyllabic on the underling and phonetic level, viz. /ʃ.tē/ [ʃ.ˈteː] (§I.2.5.3.).

It has been shown (§I.2.5.6.) that the parsing of a form such as /q̟ō.l/ [q̟oːol] with a long vowel followed by an extrasyllabic consonant, which is realized phonetically as a strong syllable followed by a light epenthetic syllable in a trochaic foot (* .), has been extended by analogy into word-internal position in cases where a long vowel is followed by silent *shewa*, e.g. שָׁמְרוּ /ʃɔ̄.m.rū/ [ʃɔː.ɔm.ˈʀ̟uː] (* .) (*).

There are a few cases of the extension of the syllabic structure and/or metrical pattern of underlying word-final consonantal clusters to word-internal position. One such case is that of forms with word-internal gutturals in a closed syllable such as יַעַמְד֑וּ [jaː.ʕam.ˈðuː] 'they stand'. The metrical structure of this can be represented as follows:

[jaː.ʕam. ˈðuː]

(* .) (*)

The word would consist of two feet, the first of which is trochaic. Evidence for this is the fact that the accent can be retracted to the vowel before the guttural by the process of *nesiga* (Revell 1983), e.g.

נַ֣עַמְדָה יָּ֑חַד [ˈnaː.ʕam.ðɔː] 'let us stand' (Isa. 50.8)

The normal rule of *nesiga* is that the accent cannot be retracted further than the first syllable before the final syllable that has a full vowel sign, so long as this syllable has a long vowel. This means that the accent in a word such as הָאַמָּה 'the cubit' [hɔː.ʔam.mɔː] cannot be retracted to the initial syllable. We propose that the reason *nesiga* is possible in a form such as נַ֣עַמְדָה [ˈnaː.ʕam.ðɔː] but not in a word such as הָאַמָּה [hɔː.ʔam.mɔː] is that *nesiga* takes account of metrical feet rather than phonetic syllables. The rule is that the accent cannot be moved back further than the foot immediately preceding the word-final foot. These two words have different metrical structures, נַ֣עַמְדָה has two feet, whereas הָאַמָּה has three:

naː.	ʕam.	ðɔː
(*	.)	(*)
hɔː.	ʔam.	mɔː
(*)	(*)	(*)

Nesiga can take place in a word such as רָ֣חֲקָה מֶ֑נִּי 'it is far from me' (Job 21.16) since it too consists of two feet:

[ˈʀ̟ɔː.	ħa.q̟ɔː]
ˈ(*)	(. *)

The trochaic foot in a word such as יַעַמְד֑וּ [jaː.ʕam.ˈðuː] (* .) (*) is analogous to that of a segolate form such as מֶ֫לֶךְ [ˈmɛː.lɛχ] (* .) 'king' or נַ֫עַר [ˈnaːʕaʀ̟] (* .) 'youth', in which the final syllable is unstressed.

A form such as יַעַמְ֫דוּ [jaː.ʕam.ˈðuː] can be assumed to have the underlying phonological form /jaʕmðū/, which would correspond to the syllable structure of the equivalent morphological form in strong verbs, e.g.. יִשְׁמְרוּ /jiʃmrū]. The process of derivation would be as follows:

/jaʕmðū/ > (i) [ja.ʕam.ðū] > (ii) [jaː.ʕam.ˈðuː]

In stage (i), an epenthetic is added after the guttural in the phonetic form and the guttural is syllabified in a closed syllable with the following consonant. In stage (ii), the vowel of the preceding syllable is lengthened due to a metrical constraint against having a sequence of a light CV syllable followed by weak unstressed epenthetic syllable. This would be similar to the proposed derivation of forms with gutturals such as הֶעֱלָה, viz. /heʕ.lū/ > (i) [hɛ.ʕɛ.ˈluː] > (ii) [hɛː.ʕɛ.ˈluː] (§I.2.5.4.).

Another case of a word-internal trochaic foot is in proper names such as בֶּרֶכְיָ֫הוּ [bɛːʀ̟ɛχˈjɔːhuː] ‘Berechiah’ (1 Chron. 2.24). Here the syllabification and metrics of a word-final segolate pattern have been extended to word-internal position:

/bɛr.χ.jɔ̄.hū/

[bɛː.ʀ̟ɛχ ˈjɔː huː]

(* .) ˈ(*) < * >

In the Babylonian reading tradition, the vowel before the epenthetic has not been lengthened but rather reduced (Yeivin 1985, 1082):

ברכיהו [braχˈjɔːhuː]

This can be compared to the lack of lengthening in Babylonian pronunciation of the vowel before the epenthetic of gutturals in forms such as נַ֫עֲרָה 'young woman', which was read as [nʕaˈrɔː] or [naʕaˈrɔː] (§I.2.5.4.).

One possible case of a word-internal syllable-final consonant cluster is reflected by the vocalization of the Hebrew gentilic 'the Jerahmeelite' in L. In most cases this is vocalized הַֽיְּרַֽחְמְאֵלִי [haɟ.ɟa.ʀ̟ah̄.me.ʔeː.ˈliː]. In 1 Sam. 27.10, however, it is vocalized in L as follows:

L: הַֽיְּרְחְמְאֵלִ֒י (A: הַֽיְּרַֽחְמְאֵלִ֒י, 1 Sam. 27.10)

This was also the original vocalization of the form in 1 Sam. 30.29, though it has been corrected to הַֽיְּרַֽחְמְאֵלִ֒י. The vocalization הַֽיְּרְחְמְאֵלִ֒י is found in 1 Sam. 27.10 and 1 Sam. 30.29 also in other manuscripts written by the scribe of L, Samuel ben Jacob, showing that it is unlikely to be a random error (Phillips 2017, 16). This vocalization, therefore, may be a case of a word-internal consonant cluster at the end of a syllable analogous to word-final clusters in words such as נֵ֣רְדְּ 'nard' (Cant. 4.14) and יַ֫רְדְּ 'he causes him to dominate' (Isa. 41.2). As in the word-final clusters, the word-internal cluster in הַֽיְּרְחְמְאֵלִ֒י would have falling sonority. The cluster would come before the boundary between the stem of the name and the theophoric element (cf. the remarks concerning the name Eliphelehu in §I.2.5.7.6.).

I.2.7. Lexical *Ḥaṭef* Vowels

Some short vowels in open syllables are lexical vowels rather than epenthetic vowels. This applies mainly to a set of vowels

represented by *ḥaṭef qameṣ*. In such cases, the *ḥaṭef qameṣ* [ɔ] preserves the rounded quality of a historical lexical vowel of the morphological form and there has not been quality reduction and neutralization. They should be represented as the phoneme /o/ with unspecified length in the phonological form of the word. In conformity with the normal rule, this phoneme is realized as [ɔ] in unstressed syllables, and [oː] in syllables with the main stress, e.g.

> הַקֳּדָשִׁ֛ים [haq̟.q̟ɔ.ðɔː.ˈʃiː.im] /haq̟.q̟o.ðɔ̄.ʃī.m/ (2 Kgs 12.19 'the holy things') < **qoðɔ̄šīm*; cf. sing. קֹ֫דֶשׁ [ˈq̟oːðɛʃ])
>
> חֳרָבוֹת [ħɔ.ʀ̟ɔː.ˈvoː.oθ] /ħo.rɔ̄.vō.θ/ (Psa. 9.7 'waste places') < **ḥurɔ̄vōθ*; cf. sing. חָרְבָּ֔ה [ħɔʀ̟ˈbɔː] Lev. 26.31 'waste place')
>
> אֶצֳּרֶ֑נָּה [ʔɛsˤ.sˤɔ.ˈʀ̟ɛː.ɛn.nɔː] /ʔɛsˤ.sˤo.rɛn.nɔ̄/ (Isa. 27.3 'I guard it') < **ʾeṣorɛnnɔ̄*; cf. אֱצֹּ֖ר [ʔɛsˤˈsˤoːorˤ] (Psa. 119.69 'I keep')
>
> חֳלִי [ħɔ.ˈliː] /ħol.j/ ('illness') < **ḥuly*; cf. pausal form חֹ֑לִי [ˈħoːliː] (Deut. 7.15)
>
> רֳאִ֑י [ʀ̟ɔ.ˈʔiː] /roʔ.j/ (Gen. 16.13 'seeing') < **ruʾy*; cf. pausal form רֹ֑אִי [ˈʀ̟oːʔiː] (1 Sam. 16.12)
>
> צֳרִי [sˤɔ.ˈʀ̟iː] /sˤor.j/ ('balm') < **ṣury*; cf. pausal form וָצֹ֔רִי [vɔːˈsˤoːʀ̟iː] (Ezek. 27.17)
>
> דֳּמִי [dɔ.ˈmiː] /dom.j/ ('silence') < **dumy*
>
> חֳרִי [ħɔ.ˈʀ̟iː] /ħor.j/ ('burning') < **ḥury*

In the examples cited above the *ḥaṭef qameṣ* is the reflex of a short round historical vowel. In some cases *ḥaṭef qameṣ* in an

open syllable is the result of the shortening of an original [oː] /ō/ or [ɔː] /ɔ̄/ in an unstressed syllable, e.g.

> צִפֳּרִים [sˤip.pʰɔ.ˈʀ̟iː.im] /sˤip.pʰo.rī.m/ (Lev. 14.49 ‘birds’) < **ṣippōrīm*; cf. sing. צִפּוֹר [sˤippʰoːoʀ̟])

> כֻּתֳּנֹת [kʰut.tʰɔ.ˈnoː.oθ] /kʰut.tʰo.nō.θ/ (Exod. 29.8 ‘tunics’) < ***kuttōnōθ***; cf. sing. כֻּתֹּנֶת [kʰutˈtʰoːnɛθ]

> בָּמֳתֵי [ˈbɔː.mɔ.θeː] /bɔ̄.mo.θē/ (Isa. 14.14 ‘the heights of’) < *ˈ***bɔ̄mōθē***; cf. בָּמוֹת [bɔːˈmoːoθ] ‘heights’

> הֶחֳדַלְתִּי [hɛː.ħɔ.ˈðaː.al.tʰiː] /hɛɛ.ħo.ðal.tʰī/ (Jud. 9.9. ‘shall I cease?’) < **ḥɔ̄ˈðāltī*

There are some cases where the *qere* has a lexical *ḥaṭef qameṣ* where the *ketiv* has a *mater lectionis vav*, e.g.

> Neh. 13.23: *ketiv* אשדודיות עמוניות, *qere* אַשְׁדֳּדִיּוֹת עַמֳּנִיּוֹת ‘Ashdodite, Ammonite (women)’

The *ketiv*, in such cases, would seem to reflect a variant reading in which a historical long /ō/ had not been shortened.

Some words with *ḥaṭef qameṣ* in an open syllable exhibit variants in which the reduction to an epenthetic has taken place. This is seen, for example, in the vocalization הַקְּדָשִׁים ‘the holinesses’ (Ezek. 44.13) instead of the more common הַקֳּדָשִׁים. Compare also וְאֶצֳּרֶנָּה (Psa. 119.33 ‘and I will keep it’) to אֶצֳּרֶנָּה (Isa. 27.3 ‘I guard it’), and שִׁבֲּלֵי ‘branches of’ (Zech. 4.12), which seems to be the same lexical item as שִׁבֳּלִים ‘ears of grain’ (Gen. 41.5). In some cases, the variants are differences between Masoretic authorities. Mishaʾel ben ʿUzziʾel, for example, in his *Kitāb al-Khilaf* records a variation between the reading of Ben Asher

אֶכְתֲּבֶנָּה 'I will write it' (Jer. 31.33) and that of Ben Naftali אֶכְתֲּבֱנָּה (Lipschütz 1965, לג).

Yeivin (1980, 283) identifies some cases of *ḥaṭef segol* on non-guttural consonants as a lexical vowels ('morphological use' in his terminology). These are found mainly in Biblical Aramaic, e.g. בֱּנַיְתַהּ (Dan. 4.27 'I built it'), קֱרִ֣י (Ezra 4.18 'it was read'), גֱּלִ֣י (Dan. 2.30 'it was revealed'). A Hebrew example is וּֽבְצֶלְצֱלִ֑ים (A, C 2 Sam. 6.5 'and with cymbals'). L has simple *segol* here: וּֽבְצֶלְצֶלִ֑ים. It is not clear, however, whether any of these preserve the original quality of a lexical vowel or whether they reflect some kind of assimilation to the phonetic environment.

The qualities of *ḥaṭef qameṣ* [ɔ] and *ḥaṭef segol* [ɛ] share the property of being lax vowels, in that they were produced in the central vowel space. Phonetic studies of other languages have shown that, all other things being equal, unstressed lax vowels are shorter than unstressed tense vowels.[176] This feature of the lax vowels [ɔ] and [ɛ] could have been the principal reason why the retention of their qualities was allowed in conditions where tense vowel qualities were reduced.

In some manuscripts, a *shewa* sign is marked where L has a lexical vowel represented by *ḥaṭef qameṣ.* In MS Sassoon 507 (S), for example, the plural form כֻּתֳּנֹת is vocalized כֻּתְּנֹת.[177] The treatise *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §19) states that some scribes wrote *shewa* rather than *ḥaṭef qameṣ* in the words מָרְדֳּכַי and כֻּתֳּנוֹת, where the *ḥaṭef qameṣ* represented a lexical vowel. The following passage from *Hidāyat al-Qāriʾ* also refers to the practice

[176] For example, Delattre and Hohenberg (2009).

[177] Yeivin (1968, 35), Shashar (1983, 21).

of some scribes to mark short lexical vowels in open syllables with *shewa* rather than a *ḥaṭef* sign:

> It is said … that some scribes wanted to remove uncertainty from places that may lead to error and have combined a vowel with *shewa* … because they thought that people would err in the reading of (for example) מָרְדֳּכַי. When some people saw *shewa* without *qameṣ* in מָרְדְּכַי, they read it as *pataḥ*. If they saw *qameṣ* alone, they were at risk of giving the *qameṣ* its full length. So, the scribes decided to combine them so that this degree of uncertainty be removed. This applied also to similar cases. This is an exception to their customary practice. What supports the claim that this is the view of only some of them with regard to letters not belonging to the group of the four (guttural letters) is that in most codices one does not find what has been presented as counterevidence (i.e. the marking of *ḥaṭef* signs on non-guttural letters), but all codices are uniform in the combination of *shewa* with a vowel under the four (guttural) letters.[178]

These variations in vocalization whereby the *shewa* sign is written instead of *ḥaṭef qameṣ* representing lexical vowels in words such as מָרְדֳּכַי and כֻּתֳּנוֹת are variations in notation of the lexical vowel rather than its reduction to an epenthetic.

The form רֳאִי [ʀ̟ɔ.ˈʔiː] (Gen. 16.13 'seeing') indicates that a *ḥaṭef qameṣ* that represents a lexical vowel does not assimilate to the quality of the vowel after a following guttural, unlike epenthetic vowels.

[178] *Hidāyat al-Qāriʾ*, Long version, edition in vol. 2 of this book, §II.L.2.12.6.

The status of these lexical vowels represented by *ḥaṭef qameṣ* involved not only the resistance to neutralization of their historical vowel quality and to assimilation to the quality of adjacent vowels but also retention of a stronger metrical structure than epenthetics. This is demonstrated by the distribution of the allophones of *resh*. In the medieval sources, the *resh* was said to have its default uvular realization in a word such as צֳרִ֣י [sˤɔ.ˈʀ̟iː] 'balm' (Gen. 43.11),[179] i.e., after an alveolar consonant with *ḥaṭef qameṣ*. As remarked in §I.1.20., when the alveolar has vocalic *shewa* in this environment, as in the word צְרוּפָ֑ה [sˤɑ.rˤuː.ˈfɔː] 'refined (fs)' (2 Sam. 22.31), the *resh* was in the same foot as the alveolar and had a pharyngealized apico-alveolar realization. This reflects the fact that the domain of the conditioning of the allophones of *resh* was the foot rather than the syllable:

[(sˤɑ.rˤuː.) (ˈfɔː)]

(. *) (ˈ*)

The realization of the *resh* in צֳרִ֣י [sˤɔ.ˈʀ̟iː] as an uvular can be interpreted as reflecting the fact that such a *ḥaṭef qameṣ* on a non-guttural consonant was in a separate foot from that of the following syllable:

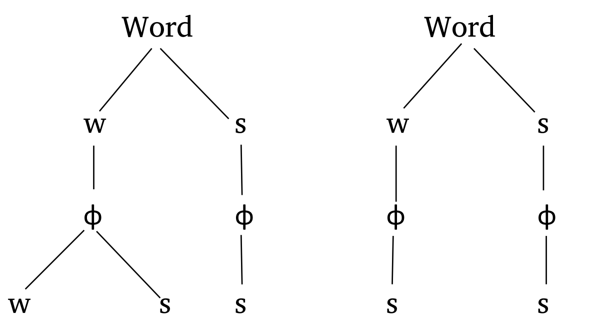
[(sˤɔ.) (ˈʀ̟iː)]

(*) (ˈ*)

The foot containing the *ḥaṭef qameṣ* consists of light monomoraic syllable CV. Metrical phonologists term this a 'degenerate

[179] See the commentary on *Sefer Yeṣira* by Saadya Gaon (ed. Lambert 1891, 79) and the sources cited in Khan (1995, 70–71).

foot’, since feet would normally be expected to be bisyllabic or bimoraic (Prince 1990; Kager 2007, 200–201). Such degenerate feet are tolerated in some languages, but often only under certain conditions, such as peripheral position or main stress. In Tiberian Hebrew, a degenerate foot consisting of a light CV syllable is only tolerated with a lax vowel quality of *qameṣ* or *segol*. Furthermore, it is only allowed if it is immediately followed by a stronger bimoraic syllable (CVV or CVC). This is analogous to the fact that a light epenthetic CV syllable, represented by a *shewa* or a *ḥaṭef* vowel, is only allowed if it is bound prosodically with a following bimoraic syllable in the same foot. This can be captured by proposing metrical tree structures such as the following:



[(sˤɑ. rˤuː) (ˈfɔː)] [(sˤɔ.) (ˈʀ̟iː)]

Key: w = weak, s = strong, ф = foot

These trees show that CV syllables with lexical vowels have at a higher metrical level the same rhythmic relationship with what follows as does a CV epenthetic vowel within a foot. The bimoraic syllable following a lexical vowel is stronger than the

lexical vowel on a higher metrical level, just as a bimoraic syllable is stronger than a preceding epenthetic CV within a foot.

A series of two light CV syllables is not tolerated, and a foot with the syllabic structure CVCV is not licit. So a degenerate CV foot cannot be combined with a preceding monomoraic syllable of a vocalic *shewa* of a preposition or a short */u/* of the conjunctive *vav*. In such cases the *ḥaṭef qameṣ* vowel is elided and in this respect it behaves like a vocalic *shewa*, e.g.

> בִּדְמִ֣י [bið.ˈmiː] (Isa. 38.10 'in the silence of' versus דֳּמִ֣י (Isa. 62.6)
>
> וּצְרִ֣י [wusˁ.ˈrˁiː] (Gen. 37.25 'and balm') versus צֳרִ֔י (Gen. 43.11)

Another repair strategy is to lengthen a preceding short vowel, as is found when the degenerate foot is preceded by interrogative *he*, e.g.

> הַצֳּרִ֗י אֵ֚ין בְּגִלְעָ֔ד [haː.sˁɔ.ˈʀiː] 'is there no balm in Gilead?' (Jer. 8.22)

Another way in which syllables with lexical vowels behave like vocalic *shewa* is in the retraction of the accent (*nesiga*). It was established in §I.2.6. that *nesiga* operates within the domain of metrical feet rather than syllables and the general rule is that it retracts not further than the foot that immediately precedes the word-final foot. In a construction such as בָּ֣מֳתֵי עָ֑ב 'the heights of the clouds' (Isa. 14.14) with a CV syllable containing a lexical *ḥaṭef qameṣ* vowel, the foot of this syllable is ignored and the stress retracts back to a syllable that is the third foot from the end:

[ˈbɔː mɔ θeː]

ˈ(*) (*) (*)

It would seem, therefore, that a degenerate foot containing a short CV syllable with a lexical short vowel was ignored by *nesiga* and so such a syllable behaves like the syllable of an epenthetic vowel that does not have its own foot, as in רָ֣חֲקָה מֶ֣נִּי ‘it is far from me’ (Job 21.16):

[ˈʀ̟ɔː ħa.q̟ɔː]

ˈ(*) (. *)

Nevertheless, there is evidence that such *ḥaṭef qameṣ* and *ḥaṭef segol* lexical vowels where metrically stronger than vocalic *shewa* due to their being parsed in a separate foot. Some reflections of the higher degree of metrical strength of a *ḥaṭef qameṣ* on non-guttural consonants in words like דֳּמִי include the following.

These short [ɔ] vowels represented by *ḥaṭef qameṣ* can receive a secondary stress, in which case they are lengthened and are represented by a simple *qameṣ* sign in the vocalization, e.g.,

קָֽדָשִׁים (Exod. 29.37 ‘holinesses’)

[ˌq̟ɔː.ðɔː.ˈʃiː.im]

ˌ(*) (*) ˈ(* .)

Such secondary stress, marked in this case by a major *gaʿya*, occurs, in principle, two syllables back from the main stress at the end of the word (§I.2.8.2.1.). Secondary stress does not occur in words with vocalic *shewa* in this position, since the vowel is epenthetic and is metrically weak, e.g.

דְּבָרִים 'words'

[da.vɔː.ˈʀiː.im]

(. *) ˈ(* .)

In some early Tiberian Masoretic manuscripts, moreover, *qameṣ* is written in place of *ḥaṭef qameṣ* also in pretonic syllables that do not take secondary stress, e.g.,

II Firkovitch Evr. II B 10: צָרִ֑י 'balm' (Gen. 43.11, most manuscripts have צֳרִ֑י)

L: יִגָּפֶ֫נּוּ 'he will strike him' (1 Sam. 26.10, A and most manuscripts have יִגֳּפֶ֫נּוּ)

The same applies to cases of *ḥaṭef segol* that sporadically occur under non-guttural consonants, e.g.,

L: וּבְצֶלְצֶלִ֖ים 'and with cymbals' (2 Sam. 6.5, most manuscripts have וּבְצֶלְצֱלִ֖ים)

I.2.8. VARIATION IN THE DURATION OF LONG VOWELS

I.2.8.1. Syllables with the Main Stress and Unstressed Syllables

According to the general principles of vowel length (§I.2.2.), vowels represented by basic vowel signs are long when they are either (i) in a stressed syllable or (ii) in an unstressed open syllable. There was, however, some variation in the relative duration of such long vowels. Some details of this variation can be reconstructed from the medieval sources.

I.2.8.1.1. Stressed and Unstressed Vowels

We learn from some sources that vowels in stressed syllables were longer than long vowels in unstressed syllables. This was most clearly formulated in the grammatical treatises of the Qimḥi family, e.g. Joseph Qimḥi, *Sefer Zikkaron*:

> The big vowels are always long unless the stress is adjacent to them [i.e. they are in an unstressed syllable], e.g. שָׁמַ֫ר: the stress is on the mem, so you do not lengthen the qameṣ of the shin.[180]

> David Qimḥi, *Sefer Mikhlol*:

> If adjacent to the 'big' vowel there is another vowel, either 'small' or 'big', and the stress falls on the letter next to it, you shorten the first vowel even though it is 'big', e.g. זָכַ֫רְתִּי לָ֫ךְ 'I remember for you' (Jer. 2.2): here the stress is on the *kaf* and you lengthen the stressed vowel despite the fact that it is 'small' Just as you lengthen this vowel, so you shorten the vowel of the *zayin,* although this is *qameṣ.*[181]

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[180] Bacher (ed.) (1888, 17): הגדולות יש להם עיכוב ואיחור בכל קריאתם חוץ אם טעם התיבה סמוך לה כמו שָׁמַ֫ר הטעם במ״ם לא תאריך קמצות השי״ן. The Qimḥis classified the Hebrew vowels into 'big' vowels and 'small' vowels according to their quantity. The 'big' vowels were *ṣere, ḥolem* and long *qameṣ, shureq,* and *ḥireq.* The 'small' vowels were *pataḥ, segol, qameṣ ḥaṭuf,* short *ḥireq* and *qibbuṣ.*

[181] Ed. Rittenberg (1862, 137b–138a): ואם תהיה בצד התנועה הגדולה תנועה אחרת קטנה וגדולה ובאות אשר לצדה טעם אתה משפיל התנועה הראשונה אע״פ שהיא גדולה כמו זכרתי לך הנה הטעם בכ״ף היא תנועה קטנה ואע״פ כן תעמידנה מפני הטעם שבה ולפי שתעמידנה תשפיל קריאת הזי״ן אע״פ שהיא קמוצה.

Given that the Karaite transcriptions and other medieval sources[182] clearly indicate that vowels in unstressed open syllables were long, these statements by the Qimḥis were probably not intended to mean that the unstressed long vowels were reduced completely to short ones but rather that these were still long relative to the short vowels although they were not as long as vowels that were lengthened by stress. This relative quantity difference between stressed and unstressed long vowels can also be inferred from other grammatical works, e.g. the epitome of Saadya's grammatical work known as *Kitāb Naḥw al-ʿIbrānī* 'The Book of the Grammar of Hebrew', which was published by Eldar (1981, 128):

> In the words: קֽוּמִי אֽוֹרִי 'Arise! Shine out!' (Isa. 60.1) you lengthen the beginning of the word because it is feminine, but when it is masculine, you say לְי֖וֹם קוּמִ֣י לְעַ֑ד 'for the day that I arise as a witness' (Zeph. 3.8), lengthening the end of the word because it is masculine.[183]

This tendency to reduce the duration of the long vowel in unstressed syllables may explain the occurrence of *ḥaṭef qameṣ* in place of the expected *qameṣ* in the form הֶ֣חֳדַ֙לְתִּי֙ [hɛːħɔðaːaltiː] 'shall I cease?' (Jud. 9.9) or in place of the expected *ḥolem* in בָּֽמֳתֵי

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[182] E.g. Saadya's commentary on *Sefer Yeṣira* (ed. Lambert 1891, 76–77).

[183] מתׄל קוׄ קומי אֽורי תמד אול אלכלמה לאנהא מונתׄה ותקול פי מא הוא מדׄכר ליום קומִֽי לעַד תמד אכׄר אלכלמה לאנה מ[דׄכר]. The concept of lengthening vs. non-lengthening/shortening in this passage and also in the extracts from the Qimḥis corresponds to the use of the terms *madd* and *qaṣr* in the Arabic *tajwīd* literature to denote 'extra length' and 'normal length' respectively, cf. Bravmann (1934, 76).

[ˈbɔːmɔθeː] 'the heights of' (Isa. 14.14) (cf. §I.2.7.). It is likely that orthoepic efforts were made to keep the relatively weak unstressed open syllables long and cases such as הֶחֱדַ֫לְתִּי and בָּ֣מֳתֵי reflect lapses in this orthoepy.

In the Karaite transcriptions, an unstressed *ḥolem* within words is sometimes represented without a *mater lectionis*, reflecting its shortening. This applies to the following example, in which a *ḥolem* occurs in an unstressed syllable before the secondary stress:

> وثَفصوثيخام (BL Or 2543 MS A, fol. 7r, 8 | L [BHS]: וּתְפוֹצֽוֹתִיכֶ֔ם Jer. 25.34 'and your dispersions')

In less careful reading, the duration of these unstressed long vowels was regularly reduced. This is reflected, for example, by a Karaite transcription of the Psalms (Khan 1990a, Genizah MS 13), in which long *qameṣ* in unstressed open syllables is not transcribed by an Arabic *mater lectionis*, e.g.

> علاو (Genizah MS 13, Khan 1990a, 13 | L [BHS]: עָלָ֣יו Psa. 109.6 'against him')

> شلاح (Genizah MS 13, Khan 1990a, 13 | L [BHS]: שָׁ֥לַ֫ח Psa. 111.9 'he sent').

In this manuscript and also in other Karaite transcriptions a long vowel in a closed syllable in an unstressed word bound by *maqqef* to what follows is, likewise, sometimes transcribed without a *mater lectionis*, e.g.

هذ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹד־ Psa. 111.3 ‘majesty’)

هن (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹן־ Psa. 112.3 ‘wealth’)

يم-كنارث (BL Or 2546, fol. 118v, 5 | L [BHS]: יָם־כִּנֶּ֫רֶת Num. 34.11 ‘sea of Chinnereth’)

لب-فرعو (BL Or 2540, fol. 20v, 7 | L [BHS]: לֵב־פַּרְעֹה Exod. 7.22 ‘the heart of Pharaoh’)

بيث ابُوثام (BL Or 2540, fol. 17r, 2 | L [BHS]: בֵּית־אֲבֹתָם Exod. 6.14 ‘the house of their fathers’)

As has been remarked in §I.2.7., in some manuscripts words that normally have *ḥaṭef qameṣ* in a pre-stress syllable are vocalized with *qameṣ*, such as II Firkovitch Evr. II B 10: צָרִי ‘balm’ (Gen. 43.11, most manuscripts have צֳרִי), L: יִגָּפֶנּוּ ‘he will strike him’ (1 Sam. 26.10, A and most manuscripts have יִגֳּפֶנּוּ). This could reflect the application of this orthoepic measure to these vowels also, which resulted in their being lengthened. Moreover, in some medieval manuscripts with Non-Standard Tiberian vocalization this orthoepic tendency is reflected by the frequent marking of *gaʿya* on the pre-stress unstressed syllable, e.g. Vatican MS Urbinati 2 (Yeivin 1980, 250–51), e.g.

בִּשְׁלֽשִׁים (L [BHS]: בִּשְׁלֹשִׁים Ezek. 1.1 ‘in the thirtieth [year]’)

הָ֣יֹה הָיָ֣ה (L [BHS]: הָיֹ֣ה הָיָ֣ה Ezek. 1.3 ‘it was’)

I.2.8.1.2. *Deḥiq*

In the Masoretic literature it is reported that a long vowel in word-final position is shortened by the phenomenon known as *deḥiq* (Aramaic: ‘compressed’). The long vowel in question is usually *qameṣ* [ɔː] or *segol* [ɛː], which are lax, rather than the tense long vowels *shureq* [uː], *ḥolem* [oː] and *ḥireq* [iː].[184] The compression takes place typically when (i) the final lax vowels *qameṣ* and *segol* occur in a word that has the stress on the penultimate syllable and is read with a conjunctive accent or when the word has *maqqef* and (ii) the following word has stress on its initial syllable, or at least on a full vowel after an initial *shewa,* i.e. on the initial metrical foot. On account of the conjunctive accent or the *maqqef,* the first word is closely bound prosodically with the following word. When a vowel is in *deḥiq*, the consonant at the beginning of the following word has *dagesh,*[185] e.g.,

L: וְאָעִ֣ידָה בָּ֔ם ‘I shall cause to witness against them’ (Deut. 31.28)

L: עָלֶ֖יךָ פָּ֑רֶץ ‘(you breached) for yourself a breach’ (Gen. 38.29)

L: אַ֥רְצָה כְּנַ֖עַן ‘to the land of Canaan’ (Gen. 12.5)

L: מִי־אֵ֣לֶּה לָּ֑ךְ ‘who are these to you?’ (Gen. 33.5)

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[184] Phonetic studies of other languages have shown that, all other things being equal, unstressed lax vowels are shorter than unstressed tense vowels; cf., for example, Delattre and Hohenberg (2009).

[185] For further details concerning *deḥiq* see Yeivin (1980, 292–93).

L: בְּמִרְעֶה־טּוֹב֙ 'in good pasture' (Ezek. 34.14)

L: תֶּהְיֶה־בּ֔וֹ 'will be in it' (Josh. 2.19)

L: תַּעֲשֶׂה־לְּךָ֣ 'you make for yourself' (Prov. 24.6)

According to *Hidāyat al-Qārī*, the final vowel here 'is not dwelt upon or prolonged in pronunciation,'[186] 'it does not have an exhalation of breath but is very compressed.'[187] In an anonymous Masoretic treatise, the syllable containing a vowel in *deḥiq* is described as 'shortened' (*makhṭūf*).[188] The vowel can be represented, therefore, as half-long, e.g. וְאָעִ֫ידָה בָּ֔ם [vɔʔɔːˈʕiːðɔˑ ˈbbɔːɔm].

When the first word is connected by *maqqef* without an accent, *Hidāyat al-Qārī* refers to the construction as *ʾathe me-raḥiq* (Aramaic: 'coming from far').[189] This is because the conjunctive accent before the *deḥiq* is further away, on the second word before the main accent, e.g.

L: ה֥וּא יִבְנֶה־בַּ֖יִת לִשְׁמִ֑י 'He will build a house for my name' (2 Sam. 7.13)

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[186] לא יתאנא ולא יטול פי אלנטק בדלך אלמלך, Long version, edition in vol. 2 of this book, §II.L.1.7.4.

[187] ליס פיה תנפס בל הו מציק גדא, Long version, edition in vol. 2 of this book, §II.L.1.7.4.

[188] Bod. Heb. d 33, fol. 16: כאן אלחרף אלדי תחתה אלתלתה נקט מכטוף 'the letter under which the *segol* occurs is shortened'.

[189] *Hidāyat al-Qārī*, Long version, edition in vol. 2 of this book, §II.L.1.7.5.

L: הֲלַמֵּתִ֥ים תַּֽעֲשֶׂה־פֶּ֑לֶא ‘Do you work wonders for the dead?’ (Psa. 88.11)

L: ס֥וּרָה שְׁבָה־פֹּ֑ה ‘Turn aside, sit here’ (Ruth 4.1)

Some cases that are identified as *ʾathe me-raḥiq* have a disjunctive on the second word before the main accent, e.g.

L: וְאֵלְכָ֥ה אֵלֶ֖יהָ וְאֶדְרְשָׁה־בָּ֑הּ ‘that I may go to her and inquire of her’ (1 Sam. 28.7)

This suggests that the main conditioning factor for the compression of the vowel is not the preceding accent but rather the status of the word with *maqqef* as prosodically subordinate to the following word. So these types of cases reflect the same basic phenomenon as cases of *deḥiq* where the word with the main accent is preceded by a word with a conjunctive accent. Some Masoretic treatises, indeed, use the term *ʾathe me-raḥiq* to refer to all cases of *deḥiq*.[190]

When unstressed tense vowels, such as the high vowels *shureq* and *ḥireq*, occur at the end of a word in the configurations for *deḥiq* that have just been described, the vowel is generally not compressed and there is no *dagesh* on the following word, e.g.

L: אֲשֶׁ֣ר הוֹרַדְתֵּ֣נוּ ב֔וֹ [hoːʀ̟aðˈtʰeːnuː ˈvoː] ‘through which you let us down’ (Josh. 2.18)

L: בָּחַ֫רְתִּי ב֥וֹ [vɔːˈħaːaʀ̟tʰiː ˈvoː] ‘I have chosen him’ (1 Chron. 28.6)

[190] E.g. the treatise published by Baer and Strack (1879, §29). See the remarks of Dotan (1969).

In such cases where the first word ends in a tense vowel, a *gaʿya* is sporadically marked on this vowel in early manuscripts, alerting the reading to the fact that the vowel should be given its full length and should not undergo compression through *deḥiq*, e.g.

L: הֵילִ֥ילִ֫י שַׁ֫עַר ‘wail, oh gate’ (Isa. 14.31)

This *gaʿya* is most commonly marked when the second word begins with a guttural consonant and cannot take a *dagesh*. In such cases, compression of the final vowel does not occur whatever its quality, e.g.

L: עֲבָדֶ֫יךָ֫ אֵ֫לֶּה ‘these servants of yours’ (2 Kings 1.13)

A: עָשִׂ֫יתָ֫ה חֶ֫סֶד ‘you did a kindness’ (1 Sam. 15.16)

A: רָאִ֫יתִ֫י אֶ֫מֶשׁ ‘I saw yesterday’ (2 Kings 9.26)

L: יַעְלִ֫ימוּ֮ עַ֫ם ‘the people hide’ (Lev. 20.4)

It is also marked on lax vowels before non-guttural consonants that do not take an expected *dagesh* in conditions suitable for *deḥiq*, e.g.[191]

L: וְעָ֫שָׂה פֶ֫סַח ‘and he keeps the Passover’ (Num. 9.14)

A: עָ֫לָה מָ֫וֶת ‘death has come up’ (Jer. 9.20)

The *dagesh* that occurs on the first letter of the second word in *deḥiq* constructions, such as וְאָעִ֫ידָה בָּ֔ם, marked the gemination of the consonant. This is likely to have been a strategy to mark clearly a boundary between the two words, which was in danger

[191] For details of the occurrence of the *gaʿya* after the stress see Yeivin (1968, 188–91).

of being lost due to the shortening of the vowel (§I.3.1.9.). A short vowel was not licit in word-final position. The gemination of the consonant was a repair strategy that compensated for the loss of duration in the preceding vowel and closed the word-final syllable. This was a fortition of the onset of the syllable in the second word. This fortition, it seems, was facilitated by the fact that the syllable was strong due to the incidence on it of the main stress:[192]

וְאָעִ֫ידָה בָּ֗ם

[vɔ.ʔɔː.ˈʕiː.ðɔˑ b.ˈbɔː.ɔm]

Such a process applied also to constructions in which the interrogative word מָה is joined to the following word by *maqqef* such as the following:

L: מַה־זֹּ֑את ‘what is this?’ (Exod. 13.14)

L: מַה־תִּתֶּן־לִ֔י ‘what will you give me?’ (Gen. 15.2)

The fact that the vowel in the interrogative word in such constructions is *pataḥ* can be interpreted as reflecting a complete shortening of the vowel at an early period. The long Tiberian *qameṣ* vowel /ɔ̄/ developed historically from a long */ā/. A short */a/, on the other hand, retained its non-rounded quality of /a/

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[192] A parallel to such a process of compensatory gemination of a word-initial consonant is the so-called raddoppiamento sintattico in spoken Italian, e.g. città bellissima [t͡ʃitˈta‿bbelˈlissima] ‘beautiful city’ (Nespor and Vogel 2012, 165–74). A parallel to the restriction of compensatory gemination to consonants following lax vowels is found in Neo-Mandaic (Häberl 2009, 76).

in the Tiberian tradition. The *pataḥ* quality in the interrogative word reflects the shortening of */ā/ to */a/ at a period before */ā/ shifted to /ɔ̄/. The fact that *deḥiq* constructions such as וְאָעִ֣ידָה בָּ֑ם have *qameṣ* in the final syllable of the first word rather than *pataḥ* either reflects a later date of the shortening, after */ā/ had shifted quality to /ɔ̄/, or reflects a process whereby the long vowel did not reduce completely to a short vowel and remained sufficiently long to undergo the quality shift.

The Karaite Arabic transcriptions, most of which indicate long vowels by Arabic *matres lectionis*, represent the final *qameṣ* and *segol* in *deḥiq* constructions, with a *mater lectionis*, e.g.

واعيدا باخ (BL Or 2551 fol. 41r, 8 | L [BHS]: וְאָעִ֣ידָה בָּ֑ךְ Psa. 81.9 'I shall testify for you')

وسيم عالاها كّاريم (BL Or 2549 fol. 145r, 1 | L [BHS]: וְשִׂים־עָלֶ֧יהָ כָּרִ֛ים Ezek. 4.2 'and set up against it the battering rams')

وندما-شّام (BL Or 2549 fol. 64r, 1 | L [BHS]: וְנִדְּמָה־שָּׁ֑ם Jer. 8.14 'and let us be silent there')

These show that in the Tiberian reading tradition, which is what most of the transcriptions reflect, the final vowel was not fully reduced to a short vowel. This is likely to have been an orthoepic measure to prevent complete shortening.

The Babylonian tradition exhibits a lesser tendency than the Tiberian tradition for such an orthoepic measure. In many manuscripts with compound Babylonian vocalization, the vowel at the end of the first word in a *deḥiq* construction is marked with

a *ḥiṭfa* sign, which indicates that it was pronounced as a short vowel (Yeivin 1985, 338), e.g.[193]

> הַשָּׁבְעָה לִּי [hiʃʃɔːvʔɔ lliː] ‘swear to me’ (Gen. 21.23 | L [BHS]: הִשָּׁבְעָה לִּ֣י)
>
> גַּרְתָּה בָּהּ [gaˈrtʰɔ bbɔː] ‘[the land] where you have sojourned’ (Gen. 21.23 | L [BHS]: גַּ֥רְתָּה בָּֽהּ)
>
> בְּמַרְעָה טוֹב [bmarʕa ttˤoːv] ‘in good pasture’ (Ezek. 34.14 | L [BHS]: בְּמִרְעֶה־טּוֹב֙).
>
> תִּהְיָה בּוֹ [tihya bboː] ‘will be in it’ (Josh. 2.19 | L [BHS]: תִּֽהְיֶה־בּֽוֹ׃)

Greek transcriptions also reflect a full shortening of the vowel. This is seen in the transcription of the vowel corresponding to Tiberian *qameṣ* with *epsilon* in the following example:[194]

> *ωσειεννα* (Klostermann 1933, Heikel 1913, Gaisford 1842) | L [BHS]: הוֹשִׁ֘יעָ֥ה נָּ֑א Psa. 118.25 ‘save, I pray!’)

Likewise, in modern reading traditions the vowel in *deḥiq* constructions is read as short, e.g.

Baghdad

> waʾᵊqbeˈreːhašˈšam (Morag 1977, 37 | L [BHS]: וָאֶקְבְּרֶ֤הָ שָּׁם֙ Gen. 48.7 ‘and I buried her there’)

Aleppo

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[193] Data supplied by Shai Heijmans.

[194] Data supplied by Ben Kantor.

neːlxašˈšam (Katz 1981, 30 | L [BHS]: נֵֽלֲכָ֣ה שָּׁ֑ם 1 Sam. 9.6 'let us go there')

The Karaite transcriptions show that also the *pataḥ* of the interrogative word מַה in constructions such as מַה־זֹּ֤את (Exod. 13.14) was pronounced long. *Hidāyat al-Qāriʾ* refers to the compression of this long vowel (see below), so it can be represented as half-long, like other long vowels compressed in *deḥiq*,[195] e.g.

ما لاخ [maˑ ˈllɔːɔχ] (BL Or 2539 MS A, fol. 64r, 7 | L [BHS]: מַה־לָּ֣ךְ Gen. 21.17 'What is to you (fs)?')

ما تتن لى [maˑ ttʰittʰɛn ˈliː] (BL Or 2539 MS A, fol. 57v, 8 | L [BHS]: מַה־תִּתֶּן־לִ֔י Gen. 15.2 'What will you (ms) give to me?')

ما شمو [maˑ ʃʃaˈmoː] (BL Or 2540, fol. 9r, 7 | L [BHS]: מַה־שְּׁמ֔וֹ Exod. 3.13 'What is his name?')

ما زّوث [maˑ ˈzzoːoθ] (BL Or 2542, fol. 60v, 11 | L [BHS]: מַה־זֹּ֤את Exod. 13.14 'What is this?').

In this light, we can understand the *qere* note in Exod. 4.2:

L: מַזֶּ֣ה מה זה קׄ

[195] Constructions with מַה־ followed by *dagesh* are considered to be *ʾathe me-raḥiq* in the Masoretic treatise published in Baer and Strack (1879, §29).

This was pronounced [maˑ-ˈzzɛː] in the reading tradition, as shown by the Karaite transcriptions, e.g.

مازا (BL Or 2540, fol. 10v, 3 | L [BHS]: *qere* מה זה, *ketiv* מַזֶּ֥ה Exod. 4.2 'What is this?')

The *qere* note indicates that the appropriate orthography for the reading [maː-ˈzzɛː] is מה זה, not מזה.

There are some Karaite transcriptions that reflect a less careful reading tradition and represent the *pataḥ* in מַה as short, e.g.

ميقار (Genizah MS 13, Khan 1990a, 156 | L [BHS]: מַה־יָּקָ֣ר 'How precious!' Psa. 36.8)

ملخا (Genizah MS 13, Khan 1990a, 156 | L [BHS]: מַה־לְּךָ֣ 'What ails you?' Psa. 114.5)

Manuscripts with compound Babylonian vocalization indicate that the *pataḥ* continued to be pronounced short in the Babylonian tradition (Yeivin 1985, 338–39):

מׇה זֹּאת [ma ˈzzoːθ] 'What is it?' (Exod. 13.14 | L [BHS]: מַה־זֹּ֑את)

מׇה יֵּעָשֶׂה [ma jjeːʕɔːˈsaː] 'What will be done?' (Exod. 2.4 | L [BHS]: מַה־יֵּעָשֶׂ֖ה)

Furthermore, there is an extant Greek transcript in Origen's Hexapla that represents the vowel corresponding to the Tiberian *pataḥ* with *epsilon*, indicating that it was read short:[196]

[196] Data supplied by Ben Kantor.

μεββεσε` (Ambrosiana palimpsest | L [BHS]: מַה־בֶּ֣צַע Psa. 30.10 'what profit?')

The lengthening of the *pataḥ* in מַה appears, therefore, to be an orthoepic measure in some core streams of the Tiberian tradition to keep the written word prosodically separate from the following word.

Hidāyat al-Qāriʾ classifies constructions with מַה followed by *dagesh* as *deḥiq*:

> The compression [of a long vowel] may occur in a word that does not have an accent but is a small word, as in מַה־תֹּאמַ֣ר 'whatever (your soul) says' (1 Sam. 20.4), זֶה־בְּנִ֣י 'This is my son' (1 Kings 3.23), מַה־בְּרִ֭י 'What, my son?' (Prov. 31.2).[197]

According to *Hidāyat al-Qāriʾ*, therefore, the *pataḥ* in מַה־תֹּאמַ֣ר (1 Sam. 20.4) and the *qameṣ* in וְאָעִ֣ידָה בָּ֔ם (Deut. 31.28) in the Tiberian tradition are both long vowels that have undergone compression. The status of the *pataḥ* in מַה as a long vowel must have been the result of later orthoepic lengthening, since the presence of the *pataḥ* clearly shows that it had undergone shortening at some earlier period. Likewise, despite the compression described in the *Hidāya* of other vowels in *deḥiq*, efforts were made in the Tiberian tradition to retain their length, to keep them clearly separate from what follows. In traditions that had less concern for orthoepy, such as the Babylonian tradition, the vowels were read as short in both contexts.

[197] Long version, edition in vol. 2 of this book, §II.L.1.7.4.

When constructions with מַה have the configuration that is optimal for minor *gaʿya*, the *pataḥ* is marked with minor *gaʿya* and is lengthened by this musical *gaʿya* rather than by orthoepic lengthening. These constructions have disjunctive accents and the *pataḥ* in the מַה in the closed syllable is separated from the stressed syllable either (i) by another closed syllable, followed by vocal *shewa* or (ii) by an open syllable followed by a *ḥaṭef* with an identical quality (i.e. patterns that may be represented thus: מְתַקְטְלִים ,מְתְפַלְפְּלִים and מְתְפַעֲלִים), e.g.[198]

L: מֽה־נַּעֲבֹד 'What we will serve?' (Exod. 10.26)

L: וּמֽה־תַּעֲשֶׂה 'and what will you do?' (Josh. 7.9)

Hidāyat al-Qāriʾ includes the last example וּמֽה־תַּעֲשֶׂה (Josh. 7.9) in the section on *deḥiq* indicating that the *pataḥ* vowel was compressed. It can be represented, therefore, [umaˑ-ttaːʕaˈseː] with half-long [aˑ]. This would be compatible with minor *gaʿya*, which results in only half-lengthening of the vowel it falls on (§I.2.8.2.2.). Karaite transcriptions transcribe the *pataḥ* in these circumstances with a *mater lectionis*, e.g.

ما ناعبوذ (BL Or 2542, fol. 56v, 10 | L [BHS]: מֽה־נַּעֲבֹד Exod. 10.26 'What we will serve')

I.2.8.1.3. The Impact of Musical Accents on Duration

The duration of a given stressed vowel relative to another stressed vowel clearly varied according to the musical accent it

[198] For more details concerning the minor *gaʿya* see Yeivin (1980, 244–245).

carried. It may be assumed that words with disjunctive accents, which marked a syntactic boundary, were chanted at a slower tempo than words with conjunctives. This is reflected by several phenomena connected with the occurrence of the secondary stress that will be discussed in §I.2.8.2.[199] Stressed vowels with disjunctives were, therefore, generally longer than those with conjunctives.[200] Moreover, the phenomenon of pausal forms suggests that the lengthening of stressed syllables of words occurring at a major syntactic division has deep historical roots in the reading tradition.[201]

The duration of a vowel also varied according to the musical motif of each accent. There are a number of allusions to differences in the length of the various accents in the Masoretic sources. *Merkha,* as its name suggests, is said to be a relatively

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[199] The practice of speakers of a language to lengthen the final word in a syntactic phrase has been discussed in several places in the literature on phonetics, e.g. O'Connor (1973, 256–60), Klatt (1975; 1976), Wightman (1992), Berkovits (1993; 1994, referring to Modern Hebrew), Turk and Shattuck-Hufnagel (2007), Gabriel and Lleó (2011). It functions as an important signal of the grammatical structure of the utterance. In the Biblical Hebrew reading tradition the musical accents underscored prosodic features which were inherent in the language (Dresher 1994).

[200] Cf. the words of the thirteenth-century *naqdan* Yequtiʾel bar Yehudah: אין העמדה במשרתים כמו במלכים ולא נכון למושכם כל כך 'There is no lengthening on the conjunctive accents as there is on the disjunctives and it is not correct to make them long' (Gumpertz 1958, 145).

[201] The occurrence of *qameṣ* in place of *pataḥ* in pausal forms such as in שָׁמָֽר 'he guarded' (Hos. 12.13), for example, must date to a period before the */ā/ > /ɔ̄/ quality shift took place.

long accent.[202] According to *Hidāyat al-Qāri*ʾ, the low, sustained accents,[203] viz. *pashṭa*, *zaqef*, *ṭifḥa*, *ʾatnaḥ* and *silluq*, were lengthened with a concomitant modulation (*hazz*) and rise in tone (*raf*ʿ) if the syllable upon which they fell was followed by another syllable, e.g. הַשָּׁמַ֫יִם ‘heaven’ (Gen. 1.1), הָאָ֫רֶץ ‘the earth’ (Gen. 1.1). If, however, they fell on the final syllable of a word, they were chanted quickly without a modulation or rise in tone.[204] Durational differences of the stressed vowel were

[202] Cf. *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, 106): מחוברת לאחותה בארוכה ‘joined to its partner with a long tone’, also Wickes (1887, 24), Ben-David (1957b, 390).

[203] The early sources divided the accents into three groups according to the nature of their tone, two of the groups contained high tone accents and the third low tone accents; cf. Yeivin (1980, 168), Eldar (2018, 85–88).

[204] *Hidāyat al-Qāri*ʾ, long version (ed. Eldar 2018, 86–87): פכל לחן יבקא בעדה מלך פי אלכלמה אסתופיה ות[תוקף] פיה ולכל לחן לא יבקא בעדה מלך ארסלה ולא ת[תוקף] פיה ‘Every accent that has a vowel remaining after it in the word you should give its full quantity and dwell on it. Every accent after which there is no vowel remaining, however, you should read quickly and not dwell on it’. The Hebrew *Maḥberet ha-Tījān*, a derivative of *Hidāyat al-Qāri*ʾ uses the Hebrew term *hanada* (הנדה) as the equivalent of *hazz* to denote ‘modulation’ (ed. J. Derenbourg 1871, 97); cf. also Hommel (1917, 95). *Hidāyat al-Qāri*ʾ and its derivative texts only lists *pashṭa/yetiv*, *zaqef* and *ʾatnaḥ* in the category of low tone accent (Arabic *waḍ*ʿ, Hebrew *niṣṣav*, *šeḥiyya*). The accents *silluq* and *ṭifḥa* are stated to have had the same properties as the low tone accents in so far as they were lengthened with a concomitant modulation and rise in tone if they fell on a penultimate syllable. See *Hidāyat al-Qāri*ʾ (ed. Eldar 2018, 85),

doubtless occasioned also by the musical structure of the other accents, but these cannot be established from the sources with any certainty.

The conjunctive accent preceding the disjunctive accent *pashṭa* is *merkha* when the two stressed syllables are not separated by another syllable (Yeivin 1980, 196), e.g.

L: יוֹצֵ֥ר אוֹר֙ ‘creating light’ (Isa. 45.7)

L: הָיְתָ֥ה תֹ֙הוּ֙ ‘was without form’ (Gen. 1.2)

Hidāyat al-Qāriʾ states with regard to such combinations:

> When its word (i.e. the word with *pashṭa*) has only one vowel (as in יוֹצֵ֥ר אוֹר֙), you give the *merkha* its full value and lengthen it, but when there are more (vowels) than that in the word (with the *pashṭa*) (as in הָיְתָ֥ה תֹ֙הוּ֙), the *merkha* is not lengthened’.[205]

Maḥberet ha-Tījān (ed. J. Derenbourg 1871, 97), *Sefer Ṭaʿame ha-Miqra* (ed. Mercerus 1565, facsimile ed. 1978, Diii, a-b). The shift of *ṭifḥa* from a high to a low tone in word final position is probably also alluded to in *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, 106, 155): במהרה בא לשיחה וסמוך לה אתנחה לאחור מתוחה ‘[When it occurs on the final syllable] it quickly passes to the category of low tone accents, and so the accent *ʾatnaḥ* is close to its tone’.

[205] Ed. Eldar (2018, 138): אד׳א לם יכון פי כלמתה אלא מלך ואחד אסתופית אלמארכה וטולתהא ואד׳א צאר פי כלמתה אזיד מן ד׳לך לא תוסתופא אלמארכה. In the corresponding passage in the Hebrew *Maḥberet ha-Tījān* it is stated that when the word with *pashṭa* has more than one vowel, readers ‘skip over’ (ידלג בה) the *merkha* and ‘cause its melisma to be swallowed’ (מבליעים בנעימתה) (ed. J. Derenbourg 1871, 95).

The reduction in the duration of the vowel with *merkha* was evidently correlated with the increased length of the vowel with *pashṭa* and the concomitant rise in tone. We learn from the descriptions of the three different categories of tone in the orthoepic treatises that the high tones had a greater intensity (magnitude of sound) than the low tones. This is clearly expressed in the following passage from the Arabic *Maḥberet ha-Tījān*. The two high tones are termed *ʾiʿlān* (‘announcing’) and *rafʿ* (‘raising’) and the low tone *waḍʿ* (‘laying down’):[206]

> The meaning of the term *ʾiʿlān* is that you ... raise the pitch of the voice and ‘make it known’ forcefully … The meaning of the term *waḍʿ* is that you lower the pitch at which you chant the word that has them [i.e. the low tone accents] and you do not ‘make the voice known’ nor raise its pitch, but rather you reduce its sound intensity .... The meaning of the term *rafʿ* is that it is intermediate between *ʾiʿlān* and *waḍʿ*.[207]

In physiological terms, when *pashṭa* occurred on a word with two vowels and penultimate stress such as ת֙הו֙, it required a greater volume of lung air, both due to its increased duration and to the rise in subglottal pressure necessary to bring about an increase in intensity. One may, therefore, explain the reduction

[206] For similar terminology in the surviving sections of *Hidāyat al-Qāriʾ* see Eldar (2018, 85-88).

[207] Ed. Neubauer (ed. 1891, 28): ומעני אלאעלאן הו אנך ... תרפע אלצות ותעלנה תחת אלכלמה אלד̇י הם עליהא ולא תעלן אלצות :אלי פוק בקווה ... ומעני אלוצ̇ע הו אן בהא ולא תרפעה בל תצ̇עה וצ̇עא סאכנא ... ומעני אלרפע אן יכון מתוסט בין אלאעלאן ובין אלוצ̇ע.

in the duration of the vowel with *merkha* as a means of decreasing air expenditure to counterbalance the increase in air expenditure elsewhere in the same expiration or ‘breath group’. It will be shown in the next section that this physiological factor also conditioned the length of vowels with secondary stress.

I.2.8.2. Syllables with the Secondary Stress

I.2.8.2.1. On Open Syllables with Long Vowels

In general, a secondary stress falls on a long vowel in an open syllable that is separated from the main stress by at least one other syllable, i.e. there is a eurhythmic alternating sequence of prominent and non-prominent syllables. The secondary stress in these contexts may be marked by certain conjunctive accents, e.g.

L: וְהָ֣אָדָ֔ם ‘and the man’ (Gen. 4.1)

L: בְּקִֽינוֹתֵיהֶ֑ם ‘in their lamentations’ (2 Chron. 35.25)

L: מַבְלִ֣יגִיתִ֔י ‘my comfort’ (Jer. 8.18)

In many cases the secondary stress is marked by a *gaʿya* sign, e.g.

L: הָֽאָדָ֗ם ‘the man’ (Gen. 2.7)

If the second syllable before the main stress syllable has a short vowel and is closed but some preceding syllable is open, then the secondary stress, in principle, falls on that syllable, e.g.

L: הָֽעַמּוּדִ֣ים ‘the columns’ (Exod. 38.11)

L: שֶֽׁעִמָּהֶ֑ם ‘who are with them’ (1 Chron. 5.20)

Similarly, if a vocalic *shewa* or *ḥatef* occurs two places back from the accent, the major *gaʿya* is placed on a preceding syllable, e.g.

L: הָֽאֲדָמָ֑ה 'the ground' (Gen. 9.2)

An additional secondary stress may be marked by a *gaʿya* on an open syllable that is separated from the first secondary stress by at least one syllable, though such *gaʿyas* are rare in the early manuscripts, e.g.

L: הָֽאַשְׂרִֽאֵלִ֑י 'the Asrielite' (Num. 26.31)

A long vowel which is separated from the main stress syllable by a *ḥaṭef* vowel or *shewa* also takes secondary stress, e.g.

L: יַֽעֲלֶ֣ה 'goes up' (Gen. 2.6)

L: וְעָֽבְד֗וּ 'and they will serve' (Jer. 30.9)

L: שָֽׁמְרוּ֙ 'they have kept' (Deut. 33.9)

We have seen that *shewa* after a long vowel is generally silent (§I.2.5.6.). The secondary stress does not, however, clash with the main stress since there is an intervening epenthetic syllable before the consonant with the silent *shewa*. e.g. [ˌʃoː.om.ˈʀ̟iː.im]. A secondary stress may also occur on a long vowel that is separated from the main stress by a geminated consonant, e.g.

L: הַבָּֽתִּ֔ים 'the houses' (Exod. 12.7)

L: אָֽנָּ֕א 'Oh!' (Exod. 32.31)

In such words, too, a syllable formed by an epenthetic vowel separates the syllable with the secondary stress from main stress: [hab.ˌbɔː.ɔt.ˈtʰiː.im].

In the metrical structure, secondary and main stresses in words such as שָֽׁמְר֨וּ and הַֽבָּ֣תִּ֔ים would occur in adjacent feet, whereas in a word such as הָֽאָדָ֔ם there is an intervening foot between those of the stresses:

[ˌʃɔː.ɔm.	ˈʀ̟uː]	
(ˌ* .)	(ˈ*)	
[hab.	ˌbɔː.ɔt.	ˈtʰiː.im].
(*)	(ˌ* .)	(ˈ* .)
[ˌhɔː	ʔɔː	ˈðɔː.ɔm]
(ˌ*)	(*)	(ˈ* .)

The stress rhythm is, therefore, based on the sequence of phonetic syllables rather than the sequence of feet.

In the early Masoretic sources, the *gaʿya* was not regarded as one of the accents but rather a sign to denote the slowing down of the reading. It appears, however, that it acquired a musical motif of its own in some cases. This is seen in the following passage on the *gaʿya* from *Hidāyat al-Qāriʾ*:

> [The *gaʿya*] should not be considered to belong either with the disjunctive accents or the conjunctive accents, since it is only an exhalation in speech, which carries the words forward … Its distinctive property is the imparting of a

melody to the reading so that joy is diffused in the heart,
in order to conduct the reading along.[208]

The term in the early sources is vocalized גָּעְיָה, reflecting its origin as an Aramaic active participle of the verb גְּעָה 'to roar, to low', or, occasionally, גִּיעְיָה. In *Hidāyat al-Qāriʾ* גָּעְיָה has an Arabic broken plural גואעי *gawāʿī*. The sign later came to be known as the מֶתֶג *meteg*, a term that was introduced by Yequtiʾel ha-Naqdan (first half of the thirteenth century) (Gumpertz 1958) and still widely used today.

Yeivin, who carried out detailed studies of the *gaʿya* in the early manuscripts, classified it into two main categories (Yeivin 1968, 89–194; 1980, 240–64):

(i) Musical *gaʿya*. This type of *gaʿya* is related to the musical cantillation and generally marks some kind of secondary stress preceding the main accent. It is dependent on the syllable structure of the word and the type of accent that is adjacent to it.

(ii) Phonetic *gaʿya*. This slows down the reading of vowels in various places to ensure the correct pronunciation of the word, usually to indicate that a following *shewa* should be made vocalic or to ensure that certain consonants were not slurred over.

The musical *gaʿya* is divided into a variety of categories. The type that marks a secondary accent on open syllables, as in

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[208] Long version, edition in vol. 2 of this book, §II.L.3.1.

הָֽאָדָם, is known as 'major *gaʿya*'.[209] In the early Masoretic codices, major *gaʿya* is not marked on all words that have a syllable structure suitable for it. Moreover, there are differences across the early manuscripts with regard to the frequency with which it is marked. This reflects the fact that the marking of major *gaʿya* was not standardized in the Tiberian tradition and it is rarely mentioned in the Masoretic treatises. It is marked infrequently in A, about 30% of the possible cases, mainly on words with the disjunctive accents *pashṭa* or *zaqef*. It is marked slightly more frequently in L, in about 40% of the possible cases. The other early manuscripts mark it in different proportions, some quite frequently (e.g. C marks it in about 75% of the possible cases). In general, however, the early manuscripts mark it less frequently than later ones and some printed editions regularly mark it on every open syllable that is suitable for it.

Mordechai Breuer (1971) has shown that some accent sequences are determined by the number of intervening full vowels without taking into account mobile *shewa*s or *ḥaṭef*s. In these systems, a vowel with secondary stress counts as two unstressed vowels. For instance, *munaḥ* before *zaqef* is transformed into *pashṭa* if the accent syllable of the word with *zaqef* is preceded by at least two full vowels: וַתֹּ֣אמֶר שָׂרָ֔ה 'and Sarah said' (Gen. 21.6), וַיֹּ֙אמֶר֙ אַבְרָהָ֔ם 'and Abraham said' (Gen.

[209] In some Masoretic sources the terms גֵּרֵשׁ *garesh*, גַּרְשָׁה *garsha* 'extending' and מַאֲרִיךְ *maʾarikh* 'lengthening' are used as general terms to refer a secondary accent in an open syllable marked either by a conjunctive accent or by a *gaʿya*; cf. Dotan (1967, 163, 342), Yeivin (1980, 86).

20.11), בְּזֹאת֙ תֵּֽדְע֔וּן ‘you will know by this’ (Num. 16.28—the *ṣere* with secondary stress counts as two full vowels), וְהִתְבָּרֲכ֣וּ בְזַרְעֲךָ֔ ‘and they will be blessed in your seed’ (Gen. 22.18—the *shewa* and the *ḥaṭef* vowel are not counted).

Major *gaʿya*, as we have seen, often signals the occurrence of a secondary stress. The fact that some manuscripts do not always mark a *gaʿya* in a syllable that one would have expected to take the secondary stress does not necessarily imply that in the reading tradition the secondary stress was not pronounced. When the presence of a *gaʿya* on an open syllable has an effect on the distribution of the accents or of other *gaʿya*s, the effect is often sustained even when the *gaʿya* is not marked, the necessary condition being only that the open syllable could have been marked by a *gaʿya* (i.e. it is appropriate for secondary stress). A couple of examples of this will suffice:

(i) If *zarqa* has two conjunctive servi and the word bearing the *zarqa* has a major *gaʿya*, then the first servus before the *zarqa* is *merkha*. If, however, the word bearing the *zarqa* has no *gaʿya*, then the first servus is usually *munaḥ*. The *merkha* occurs even if the following word does not explicitly mark the *gaʿya* on the open syllable that is suitable for it.[210]

(ii) In word structures that are suitable for taking either a minor *gaʿya* or a major *gaʿya*, such as וָֽאֶשְׁתַּמְּרָ֖ה ‘and I kept myself’ (2 Sam. 22.24), the fact that the word can take a major *gaʿya* (in this case on the open syllable at the beginning of the word)

[210] Yeivin (1980, 206–7). If, however, the second servus before *zarqa* is *munaḥ*, the first is always *munaḥ*.

obviates the occurrence of the minor *gaʿya,* even if the major *gaʿya* sign is not marked (Yeivin 1968, 141).

Compare also some of the statements concerning the major *gaʿya* in the Masoretic literature with reference to a *gaʿya* on a word with *zarqa*:

> ‘The reader pronounces the *gaʿya,* whether it is written or not written.’[211]

> ‘In some books the *gaʿya* is written whereas in others it is not written but rather the knowledge of the reader is relied upon.’[212]

It may be assumed, therefore, that the secondary stress fell on the appropriate syllable irrespective of whether it was marked graphically. A long vowel that had secondary stress was longer than an unstressed long vowel. This may be inferred from the statements in the early Masoretic and grammatical literature that a vowel with *gaʿya* is lengthened, e.g. *Hidāyat al-Qāriʾ*:

> ‘Its distinctive property is the extension of the melody.’[213]

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[211] *Sefer Ṭaʿame ha-Miqra* (ed. Mercerus, 1565, Eiii): והקורא יטעים הגעיא בפיו או כתובה או לא כתובה.

[212] Hebrew *Maḥberet ha-Tījān* (ed. J. Derenbourg 1871, 98): במקצת ספרי כותבין הגעיה ובמקצת אין כותבין אלא סומכין על דעת הקורא.

[213] וכאציתה אלאמדאד באלנגם, Long version, edition in vol. 2 of this book, §II.L.3.1. Cf. the orthoepic works derived from the *Hidāyat al-Qāriʾ*, e.g. the Hebrew *Maḥberet ha-Tījān* (ed. J. Derenbourg, 77) and the Arabic *Maḥberet ha-Tījān,* (ed. Neubauer 1891, 27), and also the references given by Yeivin (1968, 142).

It has been shown above, moreover, that in some accent sequences a syllable with secondary stress was treated as equivalent to two unstressed syllables, implying that the duration of the vowel nucleus of the syllable with secondary stress was increased by virtue of the stress. The *gaʿya* sign was, in fact, called *maʾarikh* in some sources (Wickes 1887, 24; A. Ben-David 1957b, 390–91).

Joseph and David Qimḥi say explicitly that a long vowel in a syllable that is not adjacent to the accent syllable (i.e. one that takes secondary stress) is lengthened, but not one that is in a syllable adjacent to the accent (and so does not take secondary stress), e.g. the *qameṣ* on the *shin* in the word וְשָֽׁמַרְתָּ֣ is longer than that in שָׁמַ֫ר.[214]

It has been remarked above that the early Tiberian manuscripts differ in their consistency of marking the secondary stress by *gaʿya.* Those manuscripts that marked major *gaʿya* consistently emanated from a scribal circle that tended to give graphic expression to a relatively greater number of the phonetic details of the reading tradition. The trend towards a more complete graphic notation reached its apogee in many of the Non-Standard Tiberian manuscripts, which in addition to the abundant marking of *gaʿyas,* also indicate subtle differences in the strength of consonants according to their phonetic environment (§I.3.3.). Yeivin has shown that in A, in which major *gaʿyas* are marked inconsistently, their notation is not random but follows certain trends. If the difference between the *gaʿya*

[214] Cf. the passages from the *Sefer Zikkaron* and the *Sefer Mikhlol* quoted by Yeivin (1981b, 48–49).

notation of A and that of early manuscripts that mark them more consistently arises from a tendency to indicate less phonetic minutiae, we may postulate that the selective *gaʿya* notation of A corresponds to differences in the duration of vowels with secondary stress. That is to say, some vowels with secondary stress were longer than others and only the longer ones tended to be marked. This seems plausible, since the medieval sources state that the *gaʿya* was essentially a marker of vowel duration.

The words that are marked with major *gaʿya* in A nearly all have disjunctive accents. It is very rarely marked on words with conjunctives (Yeivin 1968, 147–48). In conformity with the foregoing discussion, this may be interpreted as a reflection of the fact that vowels with secondary stress were generally shorter in words with conjunctives than in those with disjunctives. Such durational differences are not alluded to in the early Masoretic and grammatical literature. It should be pointed out, however, that the thirteenth-century *naqdan,* Yequtiʾel ha-Kohen bar Yehudah, the first scholar to deal systematically with the question of *gaʿya*s and secondary stress, states explicitly that '*meteg*s (= *gaʿyas)* of disjunctives are greater than *meteg*s of conjunctives'.[215] This can be explained by the fact that words with disjunctive accents were read slower than words with conjunctives and so the relative duration of the constituent syllables was increased.

Within the set of words with disjunctive accents, A marks major *gaʿya* most frequently on those with *pashṭa.* After *pashṭa* the accents with which it occurs most often are, in descending

[215] מתיגת המלכים גדול' ממתיג' המשרתים: *ʿEn ha-Qore* (Gumpertz 1958, 141).

order, *zaqef, ʾatnaḥ, ṭifḥa* and *reviaʿ* (Yeivin 1968, 148–60). The major *gaʿya,* therefore, is marked predominantly with the low sustained tone accents. With regard to the accents with which *gaʿya* is marked most frequently, *pashṭa* and *zaqef,* Yeivin notes that the *gaʿya* generally does not occur if the word is *milʿel,* i.e. has the accent on the penultimate syllable (Yeivin 1968, 152, 156). It is reasonable to assume that the omission of the *gaʿya* before *pashṭa* and *zaqef* on *milʿel* words was connected with the fact that the low tone accents were lengthened with a concomitant rise in pitch and intensity when they fell on a penultimate syllable (see above). The duration of the vowel with secondary stress was evidently reduced in the same way as the duration of a vowel with *merkha* was reduced before a *pashṭa* on a *milʿel* word. In both cases, the reason for the reduction was that the increase in lung air required to sustain the longer duration and greater intensity of the *pashṭa* (and *zaqef)* necessitated a decrease in air expenditure elsewhere in the same breath group. Similarly, *gaʿya* was seldom marked on words with the high tone accents since these required a larger volume of air to sustain the greater subglottal pressure necessary for their higher intensity. The vowel with the secondary stress before such accents was, therefore, of shorter duration. When, however, the low tone accents *pashṭa, zaqef, ʾatnaḥ* and *tifḥa* were on the final syllable of a word, they required relatively little air expenditure since they were pronounced quite short and with low intensity (see above). There was, consequently, more air available for the articulation of other segments in the same breath group and so

the secondary accent was pronounced with a relatively long duration.

In his study of accent retraction (*nesiga*), Praetorius suggested that in word pairs in which the expected retraction of the accent did not take place, the accent of one or of both of the words was weak and so the clash of the two stress syllables was felt to be more acceptable. The circumstances in which the stress was weakened include:

(i) Long accent groups, i.e. a disjunctive preceded by two or more words with conjunctives (Praetorius 1897, 11, 43);

(ii) When a word pair in a short accent group has a close syntactic connection to a following accent group, e.g. when the second accent group is a complement of a verb contained in the preceding accent group (Praetorius 1897, 39), e.g. the prepositional phrase in:

הֽ֣וֹי בֹּנֶ֥ה עִ֖יר בְּדָמִ֑ים ‘Woe to him who builds a town with blood’ (Hab. 2.12)

(iii) When one of the words of a short accent group has strong contrastive stress (Praetorius 1897, 51–58), e.g.

וְהַחוֹסֶ֥ה בִי֙ יִנְחַל־אֶ֔רֶץ ‘but he who takes refuge in ME will inherit the earth’ (Isa. 57.13)

Nesiga sometimes also fails to occur in a short accent group when it is in close syntactic connection with the preceding accent group and contrastive stress falls on the last word of this accent group (Praetorius 1897, 51–58), e.g.

אִם־יְהֹוָ֞ה הֱסִֽיתְךָ֥ בִי֙ ‘If (it is) THE LORD (who) has incited you against me’ (1 Sam. 26.19)

In all these cases, it is plausible to assume that the stress was reduced due to a diminution in the supply of lung air. This diminution arose in the first two cases as a result of the fact that the breath group was relatively long. In the third case, a large proportion of the air of the breath group was expended on the word with strong contrastive stress and so the amount of air available for the rest of the breath group was correspondingly reduced. The reduction in the volume of air expended on a stressed syllable would have resulted in a decrease not only of the intensity of the vowel but also of its duration. Consequently, we may infer that the aforementioned factors that conditioned the occurrence patterns of *nesiga* were also conditioning factors of vowel duration. The reduction of vowel duration in the environment of contrastive stress arose for essentially the same reason as did the reduction of the duration of vowels with *merkha* or with secondary stress before high tone disjunctives.

There is one feature of the distribution of major *gaʿyas* in the Aleppo Codex that may have been conditioned by the length of the breath group. Major *gaʿya* occurs with some accents more frequently when there are no preceding words with dependent conjunctives.[216] The absence of preceding words with conjunctives may have motivated a shorter breath group and so given rise to a corresponding increase in the duration of the stressed vowels. It is, of course, not possible to establish with absolute certainty where the boundaries of breath groups occurred in the medieval Tiberian reading tradition. Nevertheless, it is

[216] Yeivin (1968, 150 [*ʾatnaḥ*], 151 [*zaqef*]).

reasonable to assume that they coincided to some extent with the boundaries of accent groups and/or of syntactic units.

I.2.8.2.2. On Closed Syllables with Short Vowels (Minor *Gaʿya*)

Gaʿya also marked secondary stress on closed syllables with short vowels, i.e. vowels that are unspecified as to length in their phonological features (viz. *pataḥ /a/, segol /ɛ/, ḥireq /i/, qibbuṣ/shureq /u/, /o/, /e/*), as opposed to a vowel that is inherently specified by a phonological feature as long (long *qameṣ /ɔ̄/, ḥolem /ō/, ṣere /ē/,* long *shureq /ū/,* long *ḥireq /ī/*) (for details of this classification of vowels see §I.2.3.). This occurs most consistently on the first syllable of words with disjunctive accents that have the following patterns: מִֽתְפַּלְפְּלִ֔ים [ˌmiˑθpʰalpʰaˈliːim], מִֽתְקַטְּלִ֔ים [ˌmiˑθq̟ɑttˤɑˈliːim] (with a geminated consonant) and מִֽתְפַּעֲלִ֔ים [ˌmiˑθpʰaːʕaˈliːim] (with a *ḥaṭef* preceded by a vowel of the same quality).[217] These are patterns in which the main accent syllable is preceded by sequences of two closed syllables with short vowels followed by a mobile *shewa* or by a sequence of one closed syllable with a short vowel and an open syllable followed by a syllable with a *ḥatef* vowel that is the same quality as the vowel of the preceding open syllable.

Such vowels of unspecified length with *gaʿya* in words in these patterns are generally transcribed in the Karaite transcriptions with an Arabic *mater lectionis*, which indicates that they were lengthened by the secondary stress, e.g.

[217] Cf. Yeivin (1980, 244).

وايشمعو [ˌva·ɟɟiʃmuˈʕuː] (BL Or 2544 fol. 118v, 4 | L [BHS]: וַֽיִּשְׁמְע֗וּ Exod. 4.31 'and they heard')

باماحنا [ˌba·mmaːħaˈnɛː] (BL Or 2544, fol. 32v, 1 | L [BHS]: בַּֽמַּחֲנֶ֑ה Gen. 32.22 'in the camp')

ميمشفحوث [ˌmi·mmiʃpʰoˈħoːoθ] (BL Or 2546, fol. 132r, 11 | L [BHS]: מִֽמִּשְׁפְּחֹ֖ת Num. 36.1 'from the families of')

ووليعقوب [ˌwu·ljaːʕaˈq̟oːov] (BL Or 2546, fol. 85v, 8 | L [BHS]: וּֽלְיַעֲקֹ֑ב Num. 32.11 'and to Jacob')

In the Masoretic literature, this type of *gaʿya* was termed 'minor *gaʿya* (געיה קטנה) whereas the *gaʿya* that marked the incidence of secondary stress on an open syllable was termed, as remarked, 'major *gaʿya*' (געיה גדולה).[218] This implies that when secondary stress fell on a short vowel in a closed syllable, the vowel was not lengthened as much as a vowel in an open syllable with secondary stress.[219] Evidence for this lesser degree of duration is the fact that some Karaite manuscripts that transcribe long

[218] Cf. *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, 302, 383).

[219] Yequtiʾel ha-Naqdan refers to the *gaʿya* in a closed syllable as 'heavy' (כָּבֵד) and the *gaʿya* in an open syllable as 'light'. These terms of Yequtiʾel do not denote the way the *gaʿyot* were pronounced. He states that he called the *gaʿya* in closed syllables 'heavy' since: 'The heart of many sages is heavy for not having understood them … and the door [of understanding] which is open for the light ones is closed for those which are heavy' (Gumpertz 1958, 142).

vowels in open syllables or syllables with the main stress with an Arabic *mater lectionis* omit a *mater lectionis* in a syllable with secondary stressed marked by a minor *gaʿya*, e.g.

ويّشرصو [ˌvaˑɟɟiʃʀ̟ɑˈsˤuː] (BL Or 2542, fol. 43r, 6 | L [BHS]: וַֽיִּשְׁרְצ֛וּ Exod. 1.7 'and they swarmed')

نثحكما [ˌniˑθħakkʰaˈmɔː] (BL Or 2542, fol. 43r, 9 | L [BHS]: נִֽתְחַכְּמָ֖ה Exod. 1.10 'let us deal wisely')

ولياعقوب [ˌwuˑljaːʕaˈq̟oːov] (BL Or 2542, fol. 49r, 13 | L [BHS]: וּֽלְיַעֲקֹ֑ב Exod. 6.8 'and to Jacob')

For this reason, the vowel with minor *gaʿya* is represented as half-long in my phonetic transcription of the forms, e.g. [aˑ], [iˑ], [uˑ].

Some Karaite transcriptions regularly omit a *mater lectionis* only when the minor *gaʿya* is on one of the high vowels *ḥireq* [i] or *shureq* [u], but transcribes lower vowels that have minor *gaʿya* with a *mater lectionis*, e.g.

وايتنو [ˌvaˑɟɟittʰaˈnuː] (BL Or 2549 fol. 18v, 9 | L [BHS]: וַֽיִּתְּנ֛וּ Jer. 4.16 'and they gave')

لمناضاي [ˌliˑmnaːʔaˈsˤɑːɑj] (BL Or 2549 fol. 87r, 6 | L [BHS]: לִֽמְנַאֲצַ֔י Jer. 23.17 'to those who despise me')

وخمسرفوث [ˌwuˑχmisrˤɑˈfoːoθ] (BL Or 2549 fol. 112r, 14 | L [BHS]: וּֽכְמִשְׂרְפ֣וֹת Jer. 34.5 'and like the burning of')

This appears to reflect the universal phonetic phenomenon whereby, all other things being equal, high vowels tend to be of shorter duration than low vowels. This difference in duration can be above the threshold of perception (Lehiste 1970, 18–19). Evidently, the scribes of the Karaite transcriptions perceived the high vowels with minor *gaʿya* to be of shorter duration than the low vowels. Since many other transcriptions represent the high vowels with minor *gaʿya* with *matres lectionis*, we can assume that the high vowels with minor *gaʿya* were not completely short, but half-long vowels of a shorter duration relative to low vowels.[220]

Attempts were made to standardize the distribution of the minor *gaʿya* in the Tiberian Masoretic tradition and there is general agreement among the early manuscripts in its marking. This standardization is reflected by the fact that a large proportion of the differences between Aharon ben Asher and Moshe ben Naphtali that are recorded in *Kitāb al-Khilaf* of Mishaʾel ben ʿUzziʾel relate to the minor *gaʿya*.

Minor *gaʿya* occurs in the patterns described above across the boundary of words that are connected by *maqqef*, e.g. עַֽל־הַֽחֲמֹ֑ר ‘on the ass’ (Exod. 4.20). Minor *gaʿya* also occurs less consistently on a range of other related structures in which the syllable with the *gaʿya* is separated from the main accent syllable by at least one other syllable and a vocalic *shewa*, e.g.

L: הַֽכְּנַֽעֲנִ֑ית (with vocalic *shewa* additional to the מְֽתְפַּֽעֲלִ֔ים pattern) ‘the Canaanite woman’ (1 Chron. 2.3)

[220] For further details concerning the representation of minor *gaʿya* in the Karaite transcriptions, see Khan (1992c).

L: וַ֠יִּֽלָּחֲמ֣וּ (with a vowel of different quality before the *ḥaṭef*) ‘and they fought’ (Josh. 10.36)

It very rarely occurs on a syllable that is separated from the accent by only one syllable, e.g.

L: נִֽמְצָא־קֶ֙שֶׁר֙ ‘a conspiracy is found’ (Jer. 11.9).

Yeivin (1968, 89–194; 1980, 240–64) classifies major *gaʿya* and minor *gaʿya* as musical *gaʿya*s and it is reasonable to assume that the secondary stress that they represented was adorned by a short musical motif. The frequent use of conjunctive accents on open syllables to mark the secondary stress supports this view. *Hidāyat al-Qāriʾ* described *gaʿya* as bringing about ‘the extension of the melody so that joy is diffused in the heart, … animating the reader and moving him to read more’.[221] One may interpret this as referring to some kind of melismatic embellishment. The *Diqduqe ha-Ṭeʿaimim,* moreover, classifies *gaʿya* among the accents, presumably on account of its musical value.[222] Secondary stress normally fell on a long vowel in an open syllable since it was a feature of long vowels that they were more amenable to being stretched (‘dehnungsfähig’, according to the terminology of Trubetzskoy 1936; 1938) than short vowels and so could accommodate the musical contour of the secondary stress more easily. When secondary stress fell on a short vowel, the vowel was lengthened but its duration was less than that of a long vowel

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[221] Long version, edition in vol. 2 of this book, §II.L.3.1.

[222] Ed. Dotan (1967, 108, §1). *Hidāyat al-Qāriʾ*, on the other hand, does not consider *gaʿya* to be an accent; cf. Long version, edition in vol. 2 of this book, §II.L.3.1; ed. Eldar 2018, 74-75.

in an open syllable that had secondary stress. It was for this reason that short vowels in closed syllables were not usually suitable for secondary stress, since they were not lengthened enough to accommodate the melisma of the stressed syllable.

The occurrence of the secondary stress of minor *gaʿya* on short vowels in closed syllables in the patterns מְֽתְקַטְּלִ֔ים, מְֽתְפַּלְפְּלִ֔ים and מְֽתְפַּעֲלִ֔ים can be explained by the hypothesis that the sequence of two CVC-CVC syllables with short vowel nuclei functioned, under certain conditions, analogously to a single syllable with a long bimoraic nucleus CVV. Secondary stress was allowed to fall on a short vowel in such patterns since the motif associated with the stress was spread over both the stressed syllable and the syllable that followed it. There subsequently followed a buffer syllable in the form of a mobile *shewa* or *ḥaṭef*, which separated the melismatic unit of the secondary stress from the main stress syllable. Just as the most prominent component of the CVCCVC sequence accommodating the secondary stress of minor *gaʿya* was the first syllable, reflected by the lengthening of its vowel, so in a bimoraic CVV syllable the main prominence was on the first vowel mora, which is the most sonorous segment of the syllable (Kager 1993).

It would be more precise to say that the melisma of the secondary stress spread across the strong syllables of two metrical feet. This explains why minor *gaʿya* is frequently found also on structures such as הַֽכְּנַעֲנִ֑ית 'the Canaanite woman' (1 Chron. 2.3) and אֲשֶֽׁר־תְּבַשְּׁל֗וּ 'what you cook' (Exod. 16.23) (Yeivin 1980, 246), in which the syllable with secondary stress is separated from the

buffer syllable by two phonetic syllable nuclei (vocalic *shewa* + *pataḥ*) but only one metrical foot:

[(ˌha·k.) (kʰa.naː.) (ʕa.ˈniːiθ)]

(ˌ*) (. *) (. ˈ* .)

[(ʔa.ˌʃɛ·ʀ̣) (tʰa.vaʃ) (ʃa.ˈluː)]

(. ˌ*) (. *) (. ˈ*)

A form such as מִפְּנֵיכֶ֑ם 'from before you' (Lev. 18.24) was unsuitable for minor *gaʿya* since the *shewa* belongs to the second foot and the strong syllable of this foot is not separated from the main stress by the statutory buffer syllable:

[(mip.) (pʰa.neː.) (ˈχɛːɛm)]

(*) (. *) (* .)

It is for this reason that the separation between minor *gaʿya* and the main stress had to be a full vowel + mobile *shewa/ḥaṭef* vowel (מֽ͏ִתְפַּלְלִ֔ים) but could not be the same in reverse sequence (מִפְּנֵיכֶ֑ם).

A secondary accent marked by minor *gaʿya* does not occur on all closed syllables that are separated from the main stress by a second foot and a buffer syllable. It tends to occur only in those circumstances in which the vowel of the syllable under secondary stress was maximally long. In conditions in which the duration of the vowel was reduced, the minor *gaʿya* tends not to be marked. It is not clear whether the absence of the minor *gaʿya* indicates that the secondary stress was omitted or whether it denotes that the vowel was still under secondary stress but of

shorter duration and, consequently, unable to accommodate a melisma.

There were two major conditioning factors of vowel duration that affected the duration of the vowel with minor *gaʿya*. One of these was the tempo at which the word containing minor *gaʿya* was read. When chanted at a slower tempo, the vowels were stretched. Consequently, the vowels of words that had disjunctive accents were generally longer in duration than the vowels of words with conjunctives. This factor has already been inferred from the distribution of major *gaʿyas*. From the distribution of minor *gaʿyas* one may infer another factor, viz. there was a strong tendency to make the interval between the secondary stress and the main stress in all words isochronous, irrespective of differences in the number of syllables that separated them. This meant that the duration of the syllables between the two stress beats including those on which the stress occurred varied according to their number. The more intervening syllables there were, the shorter was their duration. The variation in duration of the syllable would doubtless have been achieved by lengthening or shortening of the vowels that were the most 'stretchable' constituents of a syllable. It is not clear whether this affected all the vowels, both long and short, or just the long vowels, which, by their nature, had a more flexible duration.

In the conditions in which minor *gaʿya* was regularly marked, the vowel under secondary stress was maximally long according to these two aforementioned criteria: (i) The *gaʿya* normally occurs when the word has a disjunctive accent but not when it has a conjunctive; (ii) Apart from the syllable that was

necessary to carry part of the melisma of the secondary stress, the material constituting the unstressed buffer between the two stress beats was the absolute minimum, viz. an open syllable with a short vowel nucleus (vocalic *shewa* or a *ḥaṭef* vowel): מֶֽתְפַּלְּלִ֫ים, מֶֽתְקַטְּלִ֫ים and מֶֽתְפַּעֲלִ֫ים. When the buffer between the two stresses was longer, the duration of the vowels of the word was reduced out of an effort to keep the time interval between them the same and so the *gaʿya* was usually omitted. This explains the phenomenon described in the *Diqduqe ha-Ṭeʿamim* whereby the *gaʿya* was omitted if the structures that regularly had it were attached to a following word by *maqqef,* e.g. וַיִּפְּלוּ־שָׁ֤מָּה 'and they fell there' (Gen. 14.10).[223] Even forms that have no more than an additional vocalic *shewa* between the two stress syllables, such as הַֽכְּנַֽעֲנִ֑ית 'the Canaanite woman' (1 Chron. 2.3) and אֲשֶׁ֥ר־תְּבַשְּׁל֖וּ 'what you cook' (Exod. 16.23) exhibit slightly less consistency in the placement of minor *gaʿya* than the 'fully regular structures' (Yeivin 1968, 107). Forms which have a bimoraic syllable as a buffer, i.e. an independent foot, rather than a light monomoraic syllable with mobile *shewa* or *ḥaṭef,* such as לַמִּלְחָמָ֑ה 'to war' (Num. 21.33) do not have *gaʿya* with any degree of regularity (Yeivin 1968, 117; 1980, 247). By contrast, additional syllables preceding the secondary stress fell outside the isochronous interval between the two stress beats and so had no influence on the duration of the vowels, e.g. וְאֶת־הַֽמַּאֲכֶ֑לֶת 'and the knife' (Gen. 22.6).

[223] *Diqduqe ha-Ṭeʿamim* (ed. Dotan 1967, §15), Dotan (1964, 65), Yeivin (1968, 97–98).

Minor *gaʿya* was marked with equal consistency before all the disjunctives. The duration of a vowel with minor *gaʿya,* unlike that of a vowel with major *gaʿya,* was not reduced significantly as the result of greater air expenditure on a subsequent high tone accent. This was most likely because the relatively short duration of a vowel with minor *gaʿya* required by its very nature far less air expenditure than a long vowel with major *gaʿya.* As remarked above, however, the Karaite transcriptions reflect differences in duration in the vowel with minor *gaʿya* according to intrinsic differences in duration between high and low vowels.

If an open syllable preceded the syllable that took minor *gaʿya* in a form of regular structure, the secondary stress fell on this open syllable and was either marked with major *gaʿya* or was left without graphical representation, e.g. וָֽאֶשְׁתַּמְּרָ֖ה 'and I kept myself' (A, 2 Sam. 22.24; cf. Yeivin 1968, 98). A long vowel in an open syllable was, all other things being equal, more suitable for taking the melisma of the secondary stress than a sequence of two short syllable nuclei. The duration of a stressed vowel in an open syllable, moreover, was not reduced by the pressure of isochrony between stress beats to the extent that it could not accommodate the melisma.

By this argument, in the structure מִתְפַּעֲלִים one would have expected that the vowel in the open syllable before the *ḥaṭef* could have accommodated the melisma of the secondary stress, since this vowel was long, as shown by the Karaite transcriptions, e.g.

وايـاعقوذ (BL Or 2539 MS A, fol. 67v, 2 | L [BHS]: וַֽיַּעֲקֹד֙ Gen. 22.9 'and he bound')

وايّـاعبير (BL Or 2544, fol. 32v, 11 | L [BHS]: וַֽיַּעֲבֵ֖ר Gen. 32.24 'and he caused to pass over')

عال هاحمور (BL Or 2540, fol. 12v, 2 | L [BHS]: עַל־הַחֲמֹ֔ר Exod. 4.20 'upon the donkey')

When a long vowel in this position is followed by an ordinary *shewa,* minor *gaʿya* generally does not occur (Yeivin 1968, 111), e.g. וְיִכָּלְמ֖וּ 'so they may be ashamed' (Ezek. 43.10). Here the secondary stress evidently generally fell on the syllable before the *shewa*: [vi.jik.ˌkʰɔː.ɔl.ˈmuː]. When the long vowel is followed by a laryngeal/pharyngeal with a vowel of a different quality, e.g. וַיִּֽלָּחֲמ֖וּ 'and they fought' (Josh. 10.5), the tendency for the word to have minor *gaʿya* is greater than when it is followed by a non-guttural consonant with *shewa* (וְיִכָּלְמ֖וּ) but less than when the vowel preceding the *ḥaṭef* is of the same quality (וַֽיַּעֲקֹד֙). If the word has *pashṭa,* for example, there is a preference to have secondary stress in the form of a major *gaʿya* on the syllable before the guttural rather than minor *gaʿya* on the preceding syllables, e.g. וַיִּצָּֽעֲק֙וּ 'and they were called' (Jud. 10.17; cf. Yeivin 1968, 109).

These facts can be explained by the assumption that the duration of the vowel varied in each of these three structures, those of shorter duration being less suitable for taking the full secondary stress melisma than those of longer duration. In some

manuscripts that exhibit a selective notation of major *gaʿya,* there is a greater tendency for the major *gaʿya* to be omitted on a vowel before a *ḥaṭef* than on a long vowel before a *shewa.*[224] This was probably motivated by the shorter duration of the vowel before a *ḥaṭef.*

A vowel in an open syllable that is followed by a *ḥaṭef* of the same quality must be considered to have been the shortest of the three types of vowel. The rules for accent sequences that treated a syllable with secondary stress as two syllables counted a vowel preceding a *ḥaṭef* of the same quality as only one syllable (M. Breuer 1971, 184, n.45). Consequently, if any secondary accent at all fell on such vowels, it could not have increased the vowel duration to the full length of other vowels in open syllables under secondary stress. One may also adduce as evidence of the relatively short duration of vowels of this type the fact that they do not usually take *munaḥ* before *zaqef* where the occurrence of *munaḥ* would have been expected (Yeivin 1968, 201–2; Breuer 1971, 184, n.45). It is plausible to interpret this as being due to the unsuitability of the vowels to accommodate the necessary melismatic structure of the accent due to their short duration.

The relatively short duration of a vowel before a *ḥaṭef* of the same quality was conditioned by two factors.

First factor: A number of phoneticians have shown that in some languages the duration of a vowel varies according to the

[224] Menachem Cohen (1982a, 66, 67, 69, 70, 73) has found this feature of *gaʿya* notation in the manuscripts L, C and in the later medieval Spanish manuscripts BL Or 2201 (dated 1246) and BL Or 2626-8 (dated 1483).

extent of the movement of the speech organs required in order to come from the vowel position to the position of the following phonetic segments. The greater the extent of movement, the longer the vowel.[225] It may be inferred that this principle influenced vowel duration in Tiberian Hebrew. In the sequence of a vowel, a laryngeal/pharyngeal, and a *ḥaṭef* of the same quality, no significant movement of speech organs in the oral cavity was required to make the transition from the first member to the last. There were two relevant processes involved: the tongue position for the two vowels, and the speech organ movement and muscle activity required to articulate the intervening consonant. Phonetic segments are not produced in speech as independent units, but rather the sounds overlap and flow into one continuously changing stream of sound. Several phoneticians have postulated on the basis of studies of gestures in the vocal tract that the tongue moves from vowel shape to vowel shape with the consonantal gestures superimposed, overlapping in time with the articulatory gestures for the vowels.[226] Therefore in a sequence of vowel + consonant + vowel when the two vowels are of the same quality the speech organ movement necessary to pass from the first vowel to the second would always be less than when the two vowels were of different quality, irrespective of what the intervening consonant might be.

Second factor: In Tiberian Hebrew the patterns of stress and the distribution of the accents only reflect a consistent reduction

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[225] E.g. Lehiste (1970, 20).

[226] E.g. Öhman (1966), Browman and Goldstein (1989).

in the duration of the first vowel when the intervening consonant is a pharyngeal/laryngeal. There is no evidence for a similar reduction when an oral consonant intervenes between two vowels of the same quality, except, occasionally, when the consonant is a lax continuative, especially sonorants. An important factor contributing to the reduction of duration must, therefore, have been the phonetic nature of the pharyngeals/laryngeals. It is relevant here to draw attention to a phenomenon that is attested in North African Arabic dialects whereby long vowels are shortened before pharyngeal consonants, Moroccan, Jewish Algiers: *draʿ* ‘arm’ < **dhirāʿ*, *jnaḥ* ‘wing’ < **jināḥ* (Brockelmann 1908 vol. 1, 64; Marcel Cohen 1912, 135). Brockelmann explains this as the result of the articulation of the pharyngeal taking away part of the duration of the vowel. This was no doubt due to the weak vowel-like nature of non-oral consonants.[227] We may, therefore, identify this as a second factor that

[227] Another relevant parallel can be found in stress placement patterns in the Modern South Arabian languages. Dufour (2017) has demonstrated that in the history of these languages syllables attracted stress according to a hierarchy of vowel qualities thus: **a* > **i* > **u*. This means that a syllable with an **a* was favoured over syllables with higher vowels for stress placement. What is of interest is that a syllable with an **a* vowel that was followed by a guttural consonant was less favoured for stress than one that containing an **a* vowel that was not followed by a guttural. This can be interpreted as showing that the duration of the vowel was reduced when followed by a guttural and thus the vowel in this context was less suitable for stress. Cf. also Hayward et al. (1988).

is likely to have reduced the duration of Hebrew vowels before gutturals.[228]

Although the articulation of אהח״ע in Tiberian Hebrew was weak, it was only reduced completely to zero in the case of א and ה in a number of word forms, such as יָבוֹא, יֹאכַל, מָצָא and forms that used ה as a *mater lectionis* for a final long vowel. Where אהח״ע were articulated, they often caused a lowering of adjacent vowels, in many cases to the quality of *pataḥ,* the lowest vowel. This was evidently occasioned by the narrowing of the pharynx, which was achieved by pulling the back of the tongue into the pharynx and this, in turn, was facilitated by the lowering of the tongue. The association of אהח״ע with a low vowel shape may explain the following phenomenon of *gaʿya* distribution in the early manuscripts that has been noted by Yeivin (1968, 99-100). Among the cases of words of regular structure for minor *gaʿya* that, contrary to expectation, do not take minor *gaʿya* with a disjunctive accent, there is a large proportion of forms of the pattern מִתְפַּעֲלִים with *segol* + *haṭef segol,* e.g. וַיֶּאֱחֹ֮ז 'and he took

[228] There is some evidence that the duration of a vowel in an open syllable was also reduced when it was separated from a subsequent *haṭef* of the same quality by a sonorant oral continuant. When the position of the laryngeal/pharyngeal in the form מִתְפַּעֲלִים is taken by one of the sonorant consonants that characteristically do not tolerate *dagesh* in a syllable with *shewa,* minor *gaʿya* regularly occurs (Yeivin 1968, 112–13), e.g. A וֽ͏ַיְהַֽלְלוּ֙ 'and they praised' (L וַֽיְהַֽלְלוּ֙, 2 Chr. 29.30) (§I.2.8.2.2.). Again we may assume that the vowel-like sonorant took away some of the duration from the preceding vowel, making it unsuitable for secondary stress.

hold of' (Jud. 16.3), אַף־אֶעֱשֶׂנָּה 'and I will do it' (Isa. 46.11). This can be interpreted as indicating that a long vowel preceding אהח״ע with a *ḥaṭef* vowel of the same quality tended to be shorter in proportion to the lowness of the vowel quality. The tongue position for *pataḥ* was the closest to that which was appropriate for the narrowing of the pharynx and so less movement of articulatory organs was required. We may again draw a parallel with North African Arabic, where the vowel shortening before pharyngeals is restricted in principle to long low *ā* vowels.

Finally, if a long vowel was followed by a closed syllable beginning with אהח״ע and containing a vowel nucleus of the same quality, it was apparently longer than a long vowel followed by אהח״ע with a *ḥaṭef* of the same quality. This is shown by the regular occurrence of *munaḥ* on the long vowel before the closed syllable to mark secondary stress before *zaqef*, e.g. וְלַֽחַטָּאֹות 'for the sin offerings' (Neh. 10.34) (Yeivin 1968, 203). This was probably due to the fact that a consonantal onset of a prosodically strong syllable (CVC, CVV) was of a stronger articulation, therefore less vowel-like, than that of a prosodically weak syllable containing vocalic *shewa* or a *ḥaṭef*. This would have made the consonant less likely to take away duration from the preceding vowel.

It follows from the first factor discussed above that a vowel preceding a laryngeal/pharyngeal with a *ḥaṭef* of a different quality, as in וַיִּֽלָּחֲמוּ 'and they fought' (Josh. 10.36) and מִֽגֹּאֲלֵנוּ 'of our nearest kin' (Ruth 2.20), was of a slightly longer duration than a vowel before a *ḥaṭef* of the same quality. This was because the transition to the *ḥaṭef* vowel required some movement of

tongue and lip position. Through the operation of the second factor, however, the following guttural took away some of the preceding vowel duration and so these vowels did not have quite their full duration. Although they took secondary stress in the form of *munaḥ* before *zaqef* in preference to minor *gaʿya*, e.g. תִּלָּֽחֲמ֔וּ '[do not] fight' (1 Kings 22.31), they were, in general, not so suitable for secondary stress as were long vowels of full duration. There was, consequently, a certain tendency for secondary stress in other circumstances to pass over a syllable with such a vowel when conditions were favourable for the melisma of the stress to be spread over two syllables instead.

In forms such as וְיִכָּֽלְמ֖וּ 'so they may be ashamed' (Ezek. 43.10), it may be expected from the operation of the first factor that the long *qameṣ* would be reduced in duration since this was followed by an epenthetic of the same quality: [vi.jik.-kʰɔː.ɔl.ˈmuː]. Such structures, however, exhibit a lesser tendency to take minor *gaʿya* than forms such as וַיִּֽלָּחֲמ֖וּ 'and they fought' (Josh. 10.5). Evidently, the *qameṣ* in forms such as וְיִכָּֽלְמ֖וּ was longer in duration and more suitable for taking the full secondary stress melisma. This would have been due to the absence of a guttural consonant following the vowel that would have taken over part of the duration of the vowel.

I.2.9. *SHEWA GAʿYA*

The *gaʿya* sign is sometimes marked next to *shewa* or *ḥaṭef* signs. This is referred to by the terms *gaʿyat shewa* or *shewa gaʿya*. The second term will be used here. It is rare in the twenty-one books (only some 200 cases occur) but is common in the three books. It

is a musical *shewa*, but is often marked before a guttural, which suggests that there may be also a phonetic motivation for its use.[229]

There are some parallels between the occurrence of *shewa gaʿya* and that of minor *gaʿya*. *Shewa gaʿya* occurs mainly in words with disjunctive accents. Some cases of *shewa gaʿya*, moreover, occur on patterns that correspond to the regular patterns for minor *gaʿya*, viz. מְֽפַלְפְּלִים, מְֽקַטְּלִים and מְֽפַעֲלִים (the counterparts of מִֽתְפַלְפְּלִים, מִֽתְקַטְּלִים and מִֽתְפַּעֲלִים), e.g.

L: תְֽשַׁלְּח֖וּ ‘you should set free’ (Jer. 34.14)

L: כְּֽשָׁמְעֲךָ֞ ‘when you hear’ (1 Chron. 14.15)

L: בְּֽמַעֲלֵ֔ה ‘in the ascent of’ (2 Chron. 32.33)

The occurrence of *shewa gaʿya*, however, is not so concentrated on these regular patterns as the minor *gaʿya* is concentrated on its regular patterns. *Gaʿya* is found in a variety of other patterns on a *shewa* or *ḥatef* that is separated from the accent by at least one vowel, e.g.

L: וְֽאוּלָ֗ם ‘but’ (Job 12.7)

L: צְֽאִי־לָ֞ךְ ‘go out’ (Cant. 1.8)

L: וְֽרָאִ֔יתָ וְֽקָרָ֕אתָ ‘you will see and you will read’ (Jer. 51.61)

L: וְֽהָיָ֗ה ‘and it will be’ (Hos. 2.1)

L: וְֽיֹאמְר֞וּ ‘and let them say’ (Joel 2.17)

[229] For detailed treatments of the distribution of *shewa gaʿya* see Yeivin (1968, 128–37, 252–61; 1980, 252–54), Dotan (1967, 128, 218–22, 357–58, 381), M. Breuer (1982, 193–97).

L: כֱּֽהוֹצִיאָ֗ם ‘when they brought out’ (Josh. 10.24)

L: עֲֽטִישֹׁתָ֗יו ‘his sneezings’ (Job 41.10)

L: וְֽאֵת־כָּל־הַשָּׂרִ֗ים ‘and all the princes’ (2 Kings 24.14)

Shewa gaʿya also occurs on a conjunctive *vav* when it has a *shureq* before a labial, e.g.

L: וּֽמַה־תְּעֹרְר֥וּ ‘and what do you awaken?’ (Cant. 8.4)

Given the strict conditions of word length for the occurrence of the secondary stress of minor *gaʿya*, these freer occurrence patterns of *shewa gaʿya* suggest that its motivation was not exclusively to mark a secondary stress. Rather, in some cases at least, its purpose was to slow down reading for orthoepic reasons. As remarked, this is likely to apply to some cases where it occurs before a guttural. Evidence for this is the fact that there are instances where *shewa gaʿya* occurs before a guttural on a word that has an *ʾazla* accent sign that itself marks a secondary stress, e.g.

L: וְֽהָ֨יְתָ֜ה ‘and it will be’ (Isa. 28.4)

In most cases, *shewa gaʿya* occurs at the beginning of a word, as in the examples cited above. In a few cases in the three books, it occurs in the middle of a word, e.g.

L, A: אַֽשְֽׁרֵי־הָאִ֗ישׁ ‘blessed is the man’ (Psa. 1.1)

L: יַֽחְפְּֽשׂוּ־עוֹלֹ֗ת ‘they search out iniquities’ (A: יַֽחְפְּשׂ֬וּ עוֹלֹ֗ת, Psa. 64.7)

In both these cases, the *shewa gaʿya* clashes with an immediately preceding *gaʿya* or *merkha*, suggesting that it reflected the slowing of the reading for orthoepic purposes rather than a secondary stress beat.

According to Masoretic treatises, a *shewa* with *gaʿya* was read with the length of a full vowel. This is seen, for example, in a passage concerning the pronunciation of *shewa* before gutturals in the *Treatise on the Shewa* edited by Levy (1936, כ־יט):

> It (the *shewa*) should not be pronounced (in the word הַבְּעָלִים) as a pure *qameṣ*, equal (to the following *qameṣ*), i.e. with lengthening, but rather it is pronounced short, as if it were *qameṣ*, but not a full *qameṣ*, e.g. הַבְּעָלִים, but you do not say הַבָּעָלִים, for that is a mistake. Likewise, when it is adjacent to vowels other than *qameṣ*, it is pronounced short. This is also the case when two *shewa*s come together, as in אֶשְׁמְעָה, אֶרְגְּעָה, אֶרְבְּעָה, and likewise וַֽיִּקְרְאוּ, וַֽיִּמְצְאוּ, הַנִּמְצְאוּ, וַֽיִּשְׁמְעוּ. Follow this (rule), do not add to it or subtract from it, unless *gaʿya* occurs with *shewa*, in which case you make it long and it is pronounced as a *qameṣ*. For instance, the word וְהָיָה, when you add *gaʿya* to the *shewa*, i.e. וְֽהָיָה, is pronounced וָהָיָה with a full *qameṣ*. The same is so in the case of *segol*, e.g. וְֽהֶחֱזִיקוּ is pronounced וֶהֶחֱזִיקוּ. Likewise צְֽאִי־לָ֗ךְ 'go out' (Cant. 1.8) is read with *ḥireq* as if it were צִאִי־לָךְ; שְֽׁאֵל֣וּנוּ שׁוֹבֵ֮ינוּ 'our captors asked us' (Psa. 137.3) is read שֵׁאֵלוּנוּ; תְּֽאֵהֲב֬וּ פֶֽתִי 'you will love being simple' (Prov. 1.22) is read תֵאֵהבו פתי. All such instances of *shewa* are pronounced full with the pronunciation of the (vowel of the) adjacent guttural letter, on account of the principle of the *gaʿya*, for it is the *gaʿya* that lengthens them. If there is no *gaʿya*, *shewa* is always pronounced short and is not lengthened. This condition is never changed. So it is with

all the occurrences of *shewa* that we have discussed, all instances of its vocalic realization follow this rule.[230]

The purport of this and similar passages from other Masoretic treatises[231] is that a *shewa* with *gaʿya* was pronounced as a long vowel, which was equal in status to a full vowel represented by a vowel sign.

The Karaite transcriptions into Arabic indicate that *shewa gaʿya* was pronounced as a long vowel, since they represent it with a *mater lectionis*, e.g.

بانحلا (BL Or 2547 fol. 15r, 11 | L [BHS]: בְּֽנַחֲלָ֔ה Josh. 13.6 'as an inheritance')

[230] ליס ינבגׄי אן יכׄרג מתׄל קמץ מחץ בְּשָׁוֵה פתרתי בתתׄקיל בל אנמא יכׄרג בתכׄפיף כאנה קמץ ולא קמץ תאם כקולך הבעלים ולא יקול הבעלים פיכון דׄלך כׄטא. ומן כׄרוגה אדׄא גאור גׄיר אלקמץ בתכׄפיף וכדׄלך אדׄא אתפק אתׄנין מזוגין כמו תאמר אֶשְׁמְעָה אֶרְגְּעָה אֶרְבְּעָה ומתׄל וַֽיִּקְרְאוּ וַֽיִּמְצְאוּ וַֽיִּשְׁמְעוּ הנמצאים אקיס עלי הדׄא לא תזיד ולא תנקץ אלא אן יתפק מע אלשוא געיה פתתׄקלה פיכׄרג חיניׄד בקמץ כקולך הויה אדׄא געלת מעה געיה עלי הדׄא אלמתׄל וֶֽהָיָה יקאל וְֽהָיָה במקץ תאם וכדׄלך בתׄלתׄה נקט מתׄל וֶֽהֱחֱזִיקוּ כאנך תקול וֶֽחֱזִיקוּ ומתׄל צֵֽאִי לָךְ יקרא בנקטה ואחדה כאנך תקול צְאִי לך ומתׄלה שֶֽׁאֱלוּנוּ שובינו יקרא שֶֽׁאֱלוּנוּ וכדׄלך תְּֽאֵהֲבוּ יקרא תְּאֵהבו פתי. כל הדׄה ומא שאכלהא תכׄרג כׄרוג תאם ככׄרוג אלחרף אלמגאור להא מן החהע בסבב אלעלה אלתי ללגעיה לאן אלגעיה הי אלתי תתׄקלהא. ואן ליס געיה פכׄרוגהא בתכׄפיף יכון אבדא ולא בתתׄקיל ולא יתגׄיר הדׄא אלשרט לעולם וכדׄלך פי גמיע אקסאם טׄהורה אלתי שרחנאהא וגמיע חרכאתה עלי הדׄא אלמתׄל.

[231] E.g. *Hidāyat al-Qāriʾ* (short version, edition in vol. 2 of this book, §II.S.5.1, §II.S.5.3), Baer and Strack (1879, 12–13); cf. Khan (2009, 3*-7*).

كاموخام (BL Or 2552 fol. 16v, 13 | L [BHS]: כְּמוֹכֶם Job. 12.3 'like you')

واثومخاها (BL Or 2553 fol. 5v, 5 | L [BHS]: וְתֹמְכֶיהָ Prov. 3.18 'and those who support her')

عاطيسوثاو (BL Or 2552 fol. 87v, 14 | L [BHS]: עֲטִישֹׁתָיו Job. 41.10 'his sneezings')

The default pronunciation of vocalic *shewa* was with the quality of *pataḥ* [a]. This explains why the *shewa gaʿya* in the foregoing examples is represented by Arabic *mater lectionis ʾalif*, which represents long [aː]. A lengthened *ḥaṭef pataḥ* is likewise represented by *mater lectionis ʾalif*.

A *mater lectionis* is, however, sometimes omitted in the transcriptions of *shewa gaʿya*. This is regularly the case in many manuscripts in contexts where *shewa* has a higher vowel quality than *pataḥ* before *yod* or gutturals, e.g.

ويَاعبوذو (BL Or 2552 fol. 63r, 15 | L [BHS]: וְיַֽעַבְד֑וּ Job. 36.11 'and they will serve'), in which the *shewa* before *yod* is pronounced with the quality of *ḥireq* [ˌviˑjaːʕaˈvoːðuː]

واولام (BL Or 2552 fol. 18v, 7 | L [BHS]: וְאוּלָם Job. 12.7 'but'), in which the *shewa* has the quality of *shureq* before a guttural followed by *shureq* [ˌwuˑʔuːˈlɔːɔm]

> صأي لاخ (BL Or 2554 fol. 35r, 1 | L [BHS]: צְאִי־לָ֔ךְ Cant. 1.8 'go out'), in which the *shewa* is pronounced with the quality of *ḥireq* before a guttural followed by *ḥireq* [ˌsˤi·ʔiː-ˈlɔːɔχ]

> وعيناخا (BL Or 2549 fol. 112r, 6 | L [BHS]: וְֽעֵינֶ֔יךָ Jer. 34.3 'and your eyes'), in which the *shewa* is pronounced with the quality of *ṣere* before a guttural followed by *ṣere* [ˌve·ʕeːˈnɛːχɔː]

> وحوطاي (BL Or 2553 fol. 22v, 8 | L [BHS]: וְֽחֹטְאִי Prov. 8.36 'he who misses me'), in which the *shewa* is pronounced with the quality of *ḥolem* before a guttural followed by *ḥolem* [ˌvo·ħoːotˤˈʔiː]

In such manuscripts a *mater lectionis* is also sometimes omitted when the *shewa* with *gaʿya* has the quality of [a], e.g.

> تشلحو (BL Or 2549 fol. 115r, 14 | L [BHS]: תְּֽשַׁלְּח֔וּ Jer. 34.14 'you will send off')

> كناعنيم (BL Or 2552 fol. 85r, 3 | L [BHS]: כְּֽנַעֲנִ֑ים Job. 40.30 'merchants')

This distribution of *matres lectionis* representing *shewa gaʿya* in the Karaite transcriptions corresponds closely to the distribution we have seen representing minor *gaʿya*. This reflects a lesser duration of such vowels than vowels in other contexts. In my phonetic transcription of such forms, therefore, I transcribe the

vowels with half-length [aˑ], [iˑ], etc. Moreover, vowels of *shewa gaʿya* with a high quality were of a lesser duration than those with the low quality [a], as was the case with vowels marked by minor *gaʿya*. Manuscripts that do not represent high vowels of *shewa gaʿya* or minor *gaʿya* would regularly represent them if they are long vowels that are represented by vowel signs in an open syllable, as in

> ميֽِحوص (BL Or 2539 MS A, fol. 113v, 5 | L [BHS]: מִחֽוּץ Deut. 23.11 'from outside')

Likewise, inherently long vowels followed by silent *shewa* are regularly transcribed by a *mater lectionis*, as in

> وَييِراֽو (BL Or 2547 fol. 7v, 1 | L [BHS]: וַיִּֽרְא֣וּ Josh. 4.14 'and they (mpl) feared')

The fact that the *ḥireq* vowel in a word such as מִחֽוּץ (Josh. 4.14) is regularly represented by a *mater lectionis* but a vowel of the same quality with *shewa gaʿya* in a word such as וְֽיַֽעֲבֹ֑דוּ (Job. 36.11) is not regularly represented by a *mater lectionis* suggests that an open syllable containing vocalic *shewa* with *gaʿya* was different in status from the open syllable with a vowel sign. The syllable with a *ḥireq* vowel in a word such as מִחֽוּץ was bimoraic (CVV) whereas the vocalic *shewa* with *gaʿya* was monomoraic (CV) but was increased in duration phonetically by the *gaʿya*. The same applied to CVC syllables, in which the single vowel mora was increased in duration by a minor *gaʿya*. We may say that the *shewa gaʿya* stretched phonetically a short vowel, but did not, in principle, cause it to be lengthened to the duration of a long

vowel with underlying bimoraic length. The underlying syllable structure and phonetic syllable structure of a word such as וְֽעֵינֶ֗יךָ (Jer. 34.3) 'and your eyes' would be: /vʕē.nɛ̄.χɔ̄/ [ˌveˑ.ʕeː.ˈnɛː.χɔː]. In a word such as מֵֽאָדָם֙ 'from man' (Gen. 6.7), on the other hand, the long *ṣere* would be in the underlying syllable structure: /mē.ʔɔ̄.ðɔ̄.m/ [ˌmeː.ʔɔː.ˈðɔː.ɔm].

This appears to contradict the passage in the *Treatise on the Shewa* cited above, which claimed that a *shewa* with *gaʿya* was pronounced like a full long vowel. A more nuanced statement is, however, found in another passage in this treatise:

> If someone objected and said to you: If *shewa* according to you is marked only with short vowels, why do you vocalize אֱֽלֹהִים 'God' with *shewa*, in which the *ʾalef* has a long vowel. Likewise, אֲֽדֹנִי 'my Lord', הֲֽרָאִ֔יתָ 'have you seen?' (1 Kings 21.29), הֱֽטִיבֹ֔ותָ 'you did well' (2 Chron. 6.8), לֵ֣ךְ אֱֽהַב־אִשָּׁ֔ה 'go and love a woman' (Hos. 3.1), and also הֲֽמִיָּמֶ֥יךָ (A, L: הֲֽמִיָּמֶיךָ) 'since your days (began)' (Job 38.12), הֲֽמִבִּינָֽתְךָ 'is it from your understanding?' (Job 39.26). The answer is that in all these words, and the like, when the *gaʿya* is removed, they are pronounced with a short vowel. We vocalize them with *shewa* on account of this shortness. The *gaʿya* is a subsidiary addition. We should not change the basic rule on account of a subsidiary case.[232]

[232] Ed. Levy (1936, כה), *lacunae* supplied by CUL Or 1080.13.3.2, fol. 1r: פאן עארצ̇ך וקיל לך אד̇א כאן אלשוא ענדך לא יכון אלא מע אלכ̇פיף פלם תנקט אֱלֹהִים בשוא ואלאלף ת̇קיל וכד̇לך מת̇לה אֲדֹנִי ומת̇לה הֲראית הֱטיבותָ לֵךְ אֱהַב אִשָּׁה וכד̇לך הֲמִיָּמֶיךָ הֲמבִנָתךָ. אלגואב פי ד̇לך אעלם אן הד̇ה אלאלפאט̇ כלהא ומא שאכלהא אד̇א רפע ענהא אלגעיה צארת כ̇פיפה מכ̇טופה פנחן ננקטהא בשוא לאגל כ̇פתהא ואנמא אלגעיה טפילה מזאדה פיהא וליס ינבג̇י נג̇יר אלאצל מן אגל אלפרע.

This passage could be interpreted as reflecting the notion that although the *gaʿya* lengthens the vowel of the *shewa*, it does not fundamentally change the status of the *shewa* to that of a full vowel. This can be reformulated in terms of metric analysis by the hypothesis that a *gaʿya* on a vocalic *shewa* does not change the foot structure, i.e. the *shewa* still remains within the foot of the following vowel and is not parsed as a separate foot. The foot structure of the words תְּשַׁלְּח֒וּ (1 Sam. 6.3) and such as תְּֽשַׁלְּח֤וּ (Jer. 34.14) would be the same (indicated by brackets):

תְּשַׁלְּח֒וּ

[(ta.ʃal.)(la.ˈħuː)]

תְּֽשַׁלְּח֤וּ

[(ˌtaˑ.ʃal.)(la.ˈħuː)]

This should be contrasted with a CV syllable with a lexical vowel such as the *ḥaṭef qameṣ* in a word such as הַקֳּדָשִֽׁים 'holinesses' (Exod. 26.33). We have seen that such syllables are in their own separate foot, although, since it consists of a monomoraic syllable, it should be classified as degenerate (§I.2.7.). When these take secondary stress, they are lengthened to the full duration of long bimoraic vowels in open syllables and represented by a full *qameṣ* vowel. A *gaʿya* marking the secondary stress should, therefore, be interpreted as a major *gaʿya*. This prosodic structure was facilitated by the fact that they have their own foot:

קָֽדָשִׁ֑ים 'holinesses' (Exod. 29.37)

[(ˌq̟ɔː.)(ðɔː.)(ˈʃiː.im)]

The syllable of a *shewa* with *gaʿya*, by contrast, remains subordinate prosodically to the following syllable in an iambic foot (. *). It is lengthened phonetically by the *gaʿya* but does not achieve the full bimoraic weight of the following syllable of the foot. This could be analysed as a case of 'multi-plane metrics' (Bosch 1996, Gordon 2006, Ryan 2016) whereby the phonetically prominent position and the metrically prominent position in a prosodic domain such as a foot or prosodic word do not necessarily coincide. The *shewa* with *gaʿya* is phonetically prominent in the foot due to the lengthening of the vowel, but the following syllable remains the metrically prominent syllable in the foot due to its weight and stronger beat.

In the Karaite transcriptions one case has been identified in which a *shewa* with *gaʿya* is transcribed with gemination of the following consonant and the *shewa* is replaced in the vocalization with a full vowel:

بِامّاعسناو (BL Or 2555 fol. 19r, 5 | L [BHS]: בְּֽמַעֲשָׂ֑יו Ecc. 3.22 'in his works')

Here the phonetic prominence and the metrical prominence have been brought into line, in that the syllable of the strengthed *shewa* has become bimoraic and so parsed as an independent foot.

I.2.10. Metrical Epenthesis

As we have seen, patterns of secondary stress in principle exhibit eurhythmic alternating sequences of prominent and non-prominent syllables. The clash of a prominent syllable with the main

stress immediately adjacent to a prominent syllable with secondary stress marked by an accent or *gaʿya* is, in principle, avoided. There are some cases, however, where such a clash appears to take place. These include words in which a syllable with a short vowel immediately before the syllable with the main stress is marked by *gaʿya*. Such patterns occur when the contact between the two syllables consists of two weak consonants, i.e. the first syllable has a weak consonant as its coda and the following syllable has a weak consonant as its onset. This occurrence of *gaʿya* is found, for example, on a *pataḥ* where the syllable contact consists of coda that is a guttural and an onset that is one of the sonorants *yod, lamed,* or *nun*, or another guttural,[233] e.g.

יְשַֽׁעְיָ֫הוּ [ja.ˌʃaˑʕ.ˈjɔː.huː] ‘Isaiah’ (Isa. 1.1)

וּפְתַֽחְיָ֫ה [wuf.ˌθaˑḥ.ˈjɔː] ‘and Pethahiah’ (Neh. 11.24)

יְדַֽעְיָ֑ה [jaˌðaˑʕˌjɔː] ‘Jedaiah’ (Neh. 12.6)

שְׁמַֽעְיָ֥ה [ʃa.ˌmaˑʕ.ˈjɔː] ‘Shemaiah’ (Neh. 10.9)

וּשְׁמַֽעְיָ֫הוּ [wuʃ.ˌmaˑʕ.ˈjɔː.huː] ‘and Shemaiahu’ (2 Chron. 35.9)

This type of lengthening before a guttural followed by another weak consonant is found also across word boundaries, where the two words are connected by *maqqef* or where they are independent words, e.g.

שְׁמַֽע־נָ֤א [ʃa.ˌmaˑʕ.-ˈnɔː] ‘listen!’ (1 Sam. 28.22)

לָֽקַֽח־ל֫וֹ [lɔː.ˌqa̟ˑħ.-ˈloː] ‘he took him’ (Exod. 6.25)

דַֽע־לָֽךְ׃ [ˌdaˑʕ.-ˈlɔː.ɔχ] ‘know you!’ (Job. 5.27)

[233] Yeivin (1980, 262) refers to this as a phonetic *gaʿya*.

קַֽח־לְךָ֙ [ˌqa·ḥ.-ˈlɔːɔχ] ‘take for yourself’ (Gen. 14.21)

הֲשָׁ֣מַֽע עָ֡ם [ha.ˈʃɔː.ˌma·ʕ. ˈʕɔː.ɔm] ‘did any people hear?’ (Deut. 4.33)

It is even marked occasionally on furtive *pataḥ* in such circumstances, e.g.

לִשְׁמֹ֣ עַֽ לוֹ֙ [liʃ.ˈmoː.ˌa·ʕ-ˈloː] to listen to him’ (Jud. 19.25)

כֹּ֣חַֽ לֵֽב [ˈkʰoː.ˌa·ħ ˈleː.ev] ‘strength of heart’ (Job. 36.5)

This type of *gaʿya* is found also before other sequences of weak consonants across syllables in word-internal position. These consonants include gutturals, sonorants, continuants, sibilants , fricatives, and *qof*, e.g.

שַֽׁוְעַ֣ת [ˌʃa·v.ˈʕaː.aθ] ‘cry of’ (Jer. 8.19)

הַֽשְׁחִ֥ית [ˌha·ʃ.ˈħiː.iθ] ‘to destroy’ (Isa. 65.8)

חַֽסְדֵ֥י [ˌħa·s.ˈðeː] ‘love of’ (Isa. 55.3)

סַֽרְג֖וֹן [ˌsa·rˤ.ˈʁoː.on] ‘Sargon’ (Isa. 20.1)

כַּֽדְכֹּד֙ [ˌkʰa·ð.ˈχoː.oð] ‘ruby’ (Isa. 54.12)

כַֽלְנֵה֙ [ˌχa·l.ˈneː] ‘Calneh’ (Amos 6.2)

עַֽרְב֥וֹת [ˌʕa·ʀ̟.ˈvoː.oθ] ‘desert plains’ (Josh. 4.13)

It is found also on high vowels, e.g.

וּבְצִֽקְלַ֥ג [wuv.ˌsˤi·q̟.ˈlaː.aʁ] ‘and in Ziklag’ (Neh. 11.28)

מִֽשְׁכ֗וּ [ˌmi·ʃ.ˈχuː] ‘pull out!’ (Exod. 12.21)

הָֽרִֽצְפָ֔ה [hɔː.ˌrˤi·sˤ.ˈfɔː] ‘the pavement’ (2 Chron. 7.3)

וּבַקְבֻּֽקְיָ֗ה [wu.vaq̟.ˌbu·q.ˈjɔː] ‘and Bakbukiah’ (Neh 12.9)

The lengthening of the vowel is reflected by the Karaite transcriptions by an Arabic *mater lectionis*, although the *gaʿya* sign is not always marked in the manuscripts, e.g.

شنساعيا (BL Or 2556, fol. 65r, 1 | L [BHS]: שְׁמַֽעְיָ֫ה Neh. 10.9 'Shemaiah')

فثاحيا (BL Or 2556, fol. 54v, 2 | L [BHS]: פְּתַֽחְיָ֗ה Neh. 9.5 'Pethahiah')

داعَ-لاخ (BL Or 2552 fol. 7v, 4 | L [BHS]: דַֽע־לָֽךְ׃ Job. 5.27 'know you!')

سماع-نا (BL Or 2552 fol. 47v, 1 | L [BHS]: שְׁמַֽע־נָ֣א Job. 33.1 'hear please!')

لاقاح لو (BL Or 2542, fol. 50r, 5 | L [BHS]: לָֽקַח־ל֛וֹ Exod. 6.25 'he took him')

واشابا ع-لاخ (BL Or 2549 fol. 226v, 9 | L [BHS]: וָאֶשָּׁ֣בַֽע לָ֡ךְ Ezek. 16.8 'and I swore to you')

اسبياع لاحـ[ ] (BL Or 2551 fol. 96r, 13 | L [BHS]: אַשְׂבִּ֥יעַֽ לָֽחֶם׃ Psa. 132.15 'I will satisfy (with) bread')

هساماع عام (BL Or 2539 MS A, fol. 88v, 1 | L [BHS]: הֲשָׁ֣מַֽע עָ֡ם Deut. 4.33 'did a people hear')

شاوعاث (BL Or 2549 fol. 65v, 1 | L [BHS]: שַֽׁוְעַ֣ת Jer. 8.19 ‘cry of’)

حَاسْذى (BL Or 2548 fol. 168r, 7 | L [BHS]: חַֽסְדֵ֥י Isa. 55.3 ‘love of’)

كاذخوذ (BL Or 2548 fol. 164v, 11 | L [BHS]: כַּֽדְכֹּ֔ד Isa. 54.12 ‘ruby’)

وبقبوقيا (BL Or 2556, fol. 79r, 9 | L [BHS]: וּבַקְבֻּֽקְיָ֗ה Neh. 12.9 ‘and Bakbukiah’)

وبصيقلاغ (BL Or 2556, fol. 78r, 2 | L [BHS]: וּבְצִֽקְלַ֑ג Neh. 11.28 ‘and in Ziklag’)

In some manuscripts, the *mater lectionis* is occasionally omitted in places where the *gaʿya* in L occurs on high vowels, e.g.

مشحو (BL Or 2542, fol. 58v, 7 | L [BHS]: מִֽשְׁכ֗וּ Exod. 12.21 ‘pull out!’)

This is analogous to the omission of a *mater lectionis* where minor *gaʿya* or *shewa gaʿya* occur on a high vowel. It indicates that the duration of the vowel lengthened by this type of phonetic *gaʿya* was less than that of a long bimoraic vowel in an open syllable and that high vowels were inherently shorter than low vowels. The vowel, therefore, should be represented as half-long in roman transcription, e.g. [aˑ], [iˑ], [uˑ], as is the case with the vowels with minor *gaʿya* or the vowels of *shewa gaʿya*.

The *shewa* after this type of *gaʿya* was silent. This is shown by the representation of the silent *shewa* by Arabic *sukūn* in some of the Karaite transcriptions and by the fact that A regularly has a simple *shewa* sign rather than a *ḥaṭef pataḥ*. This should be contrasted with cases of phonetic *gaʿya* that augment the short vowel by an extra mora and cause the *shewa* to be vocalic by inducing a resyllabification (§I.2.5.8.), e.g.

L: הֲתֶֽמְלֹ֔ךְ [ha.θiː.ma.ˈloː.oχ] 'Are you a king?' (A הֲתֶֽמֲלֹ֔ךְ, Jer. 22.15)

In such cases, the vowel should be transcribed as fully long, viz. [aː], [iː], [uː].

The purpose of the phonetic *gaʿya* before a silent *shewa* in forms such as יְשַֽׁעְיָ֫הוּ [ja.ˌʃaˑʕ.ˈjɔː.huː] was orthoepic, just as was the case with the phonetic *gaʿya* before a vocalic *shewa* in a word such as הֲתֶֽמְלֹ֔ךְ [ha.θiː.ma.ˈloː.oχ]. Both cases were a measure to avoid the slurring of the weak letters together in the reading. They were evidently felt to be vulnerable to such slurring due to the fact that they formed a suboptimal syllable contact. The optimal contact between two adjacent syllables is where the onset of the second syllable is stronger than the offset (coda) of the preceding syllable (Vennemann 1988, 40).

In forms such as יְשַֽׁעְיָ֫הוּ [ja.ˌʃaˑʕ.ˈjɔː.huː], the clash of two prominent syllables can be assumed to have induced a repair mechanism in the form of a short pause equivalent to a weak beat, in effect a metrical epenthetic or zero syllable. The foot and grid structure of this can be represented thus (the final syllable enclosed in angular brackets is extra-metrical):

Level 4				x	
Level 3		x		x	
Level 2		x		x	<x>
Level 1	x	x	x	x	<x>
Feet	(.	ˌ*)	(.	ˈ*)	<*>
	ja	ˌʃa·ʕ	∅	ˈjɔː	huː

In some cases lengthening of the vowel before the weak consonants is represented in the Karaite transcriptions where a *gaʿya* is not marked in L. It regularly occurs, for example, in the word יְשַׁעְיָהוּ even where L does not have *gaʿya* on the *shin*, e.g.

يشاعياهُو (BL Or 2548 fol. 14r, 9 | L [BHS]: יְשַׁעְיָ֫הוּ Isa. 37.5 'Isaiah')

A minor *gaʿya* is marked on some constructions that have a phonetic *gaʿya* of this nature, e.g.

A: מַֽפַּֽח־נָֽפֶשׁ, [ˌma·pˌpʰa·ħ∅ˈnɔːfɛʃ] 'the breathing out of the soul' (L [BHS]: מַפַּֽח־נָֽפֶשׁ Job. 11.20)

L: וְיִֽשְׁמַֽעְיָ֫ה [viˌji·ʃˌma·ʕ∅ˈjɔː] 'and Ishmaiah' (1 Chron. 12.4)

L: וַיִּֽקַּֽח־ל֫וֹ [vaɟˌɟi·q̟ˌq̟a·ħ∅ˈloː] 'and he took for himself' (Gen. 4.19)

The lengthening is reflected in the Karaite transcriptions, e.g.

مافاح-نافس (BL Or 2552 fol. 16r, 5 | A מַֽפַּֽח־נָֽפֶשׁ Job. 11.20)

ويِيزِراح لو (BL Or 2544, fol. 34r, 9 | L [BHS]: וַיִּֽזְרַח־ל֣וֹ Gen. 32.32 'and it rose for him')

This indicates that the pattern of the constructions was prosodically equivalent to the regular structures of minor *gaʿya*. They may be compared, in particular, to the pattern מִֽתְפַּעֲלִים. In a structure such as וַיִּשְׁמְעֶ֫הָ [viˌjiˑʃˌmaˑʕ∅ˈjɔː], therefore, the metrical epenthetic ∅ would correspond to the short *ḥaṭef* vowel of מִֽתְפַּעֲלִים. This is evidence for the existence of the metrical epenthetic. Moreover, the equivalence of the two structures demonstrates that the duration of the *pataḥ* before the *ḥaṭef* in מִֽתְפַּעֲלִים and of the *pataḥ* with the phonetic *gaʿya* in וַיִּשְׁמְעֶ֫הָ was equivalent, i.e. a half-long [aˑ].

Metrical epenthesis between two weak consonants in the contact of two syllables can be identified as an orthoepic strategy in some forms of the verbs הָיָה 'to be' and חָיָה 'to live'. This is achieved by lengthening the *ḥireq* of prefixes before *he* or *ḥet* and lengthening the *pataḥ* of the conjunctive prefix *va-* before *yod*, e.g.

יִֽהְיֶה [ˌjiˑhˈjɛː] 'it will be' (Gen. 1.29)

יִֽחְיֶ֫ה [ˌjiˑħˈjɛː] 'he lives' (Ecc. 6.3)

מִֽהְיוֹת [ˌmiˑhˈjoːoθ] 'from being' (Jer. 31.35)

וַֽיְהִי [ˌvaˑjˈhiː] 'and it was' (Gen. 4.3)

וַֽיְחִי [ˌvaˑjˈħiː] 'and he lived' (Gen. 5.3)

In the model Tiberian codices, the prefixes of these verbs are frequently, though not regularly, marked with a *gaʿya* sign.

The marking of *gaʿya* differs across the manuscripts. In places where it is omitted in L and A, it is often marked in C. The Karaite transcriptions indicate that the vowel of the prefixes was regularly lengthened, including where it is omitted in L and A, e.g.

ييهيا (BL Or 2549 fol. 87r, 6 | L [BHS]: יִהְיֶה Jer. 23.17 ‘it (ms) will be’)

وييهيو (BL Or 2549 fol. 55r, 14 | L [BHS], A: וַיִּהְיוּ, C: וַֽיִּהְיוּ Jer. 7.24 ‘and they were’)

تيهيا (BL Or 2549 fol. 58r, 12 | L [BHS], A: תִּהְיֶה, C: תִּֽהְיֶה Jer. 7.34 ‘it (fs) will be’)

ميهيوث (BL Or 2549 fol. 92r, 12 | L [BHS]: מִֽהְיוֹת Jer. 31.35 ‘from being’)

تيحيو (BL Or 2549 fol. 120r, 10 | L [BHS]: תִּֽחְיוּ Jer. 35.7 ‘you (mpl) will live’)

وايهى (BL Or 2540, fol. 3v, 4 | L [BHS]: וַֽיְהִי Exod. 1.5 ‘and it was’)

وايحي (BL Or 2548 fol. 28r, 9 | L [BHS]: וַֽיְחִי Isa. 38.9 ‘and he lived’)

Since the Karaite transcriptions mark the vowels as long even where the model codices, even C, do not mark *gaʿya*, the

lengthening of the vowel is not directly correlated with the marking of the *gaʿya*.

When the prefix of the verb begins with a consonant other than *yod*, the *pataḥ* in the *va-* prefixed particle is not lengthened, since there was no contact of two weak consonants and metrical epenthesis was unnecessary, e.g.

וַתְּהִ֫י [vattʰiˈhiː] ‘and it (fs) was’ (Jud. 11.29)

This is shown by the fact that Karaite transcriptions regularly have no *mater lectionis* in such contexts, e.g.

وتهي (BL Or 2547 fol. 34r, 5 | L [BHS]: וַתְּהִ֫י Jud. 11.29 ‘and it (fs) was’)

Some manuscripts of the Karaite transcriptions represent only the *pataḥ* of the forms וַיְהִי and וַיְחִי but not *ḥireq* in the prefixes of these verbs, reflecting the lengthening only of *pataḥ*, e.g. Or 2539 fols. 56–114:

وايهي (BL Or 2539 MS A, fol. 71v, 6 | L [BHS]: וַֽיְהִי־ Gen. 24.15 ‘and it was’)

يهيا (BL Or 2539 MS A, fol. 97r, 8 | L [BHS]: יִהְיֶ֫ה Deut. 18.22 ‘he will be’)

يهيو (BL Or 2539 MS A, fol. 103r, 4 | L [BHS]: יִהְי֥וּ Deut. 20.11 ‘they will be’)

Manuscripts such as Or 2539 fols. 56–114 that do not represent the *ḥireq* with *mater lectionis* mark long *ḥireq* in other contexts with a *mater lectionis*, e.g.

ميحوطּ (BL Or 2539 MS A, fol. 57r, 8 | L [BHS]: מִחוּט־ Gen. 14.23 'from a thread')

This suggests that the *ḥireq* in the prefixes of these verbs was long, but was perceived to be shorter in duration than the *pataḥ* in prefixes of these verbs and shorter than long *ḥireq* in other contexts. This is reminiscent of the short vowels in closed syllables that were lengthened by minor *gaʿya*. These, likewise, were only half-long and exhibit a lesser duration when the vowel is a high vowel (§I.2.8.2.2.).

I have presented evidence elsewhere (Khan 2018b) that the orthoepic measure of lengthening the vowels before two weak consonants in forms of the verbs הָיָה and חָיָה had deep historical roots that can be traced to the proto-Masoretic reading in Second Temple Palestine before the split of the Tiberian and Babylonian branches. It arose as a measure to ensure that the gutturals were not weakened in these verbs and thus to prevent them from being confounded. The argument, in brief, is that all initial *he* and initial *ḥet* verbs originally had an /i/ vowel in prefixes in the proto-Masoretic reading. This situation has been preserved in the Babylonian reading tradition, whereas in the Tiberian tradition the vowel generally underwent lowering to a *segol* or *pataḥ* (Yeivin 1985, 302), e.g.[234]

[234] Data supplied by Shai Heijmans.

תֹהדֹּפוּ [tihdoːfuː] (L [BHS]: תֶּהְדֹּפוּ Ezek. 34.21 'you will push')

יהרֹגוּ [yihroːʁuː] (l [BHS]: יַהֲרֹ֑גוּ Psa. 94.6 'they will kill')

The /i/ has been preserved in the verbs הָיָה and חָיָה in the Tiberian tradition because it was lengthened for orthoepic reasons. This must have taken place before the vowel lowering took place in initial *he* and *ḥet* verbs at a remote historical period when such verbs originally had /i/ in the prefixes before the Babylonian and Tiberian branches split.

This demonstrates that orthoepy was already a feature of the ancient reading and that care over the oral reading of the text went hand in hand with care over the copying of the written text at an ancient period, presumably within Temple circles.

Vowels lengthened before weak consonants for the purpose of orthoepic metrical epenthesis such as the constructions mentioned in this section, although not fully bimoraic vowels, appear to have been of a slightly longer duration than vowels in closed syllables lengthened by musical minor *gaʿya*. This is shown by the fact that there are manuscripts of Karaite transcriptions that transcribe the *ḥireq* or prefixes of the verbs הָיָה and חָיָה with an Arabic *mater lectionis* but omit the *mater lectionis* where a *ḥireq* has minor *gaʿya*, e.g.

ييهيو (BL Or 2549 fol. 59r, 1 | L [BHS]: יִֽהְי֗וּ׃ Jer. 8.2 'they will be')

هشتاحوو (BL Or 2549 fol. 58v, 13 | L [BHS]: הִֽשְׁתַּחֲו֖וּ Jer. 8.2 'they worshipped')

Likewise, there are some manuscripts that regularly transcribe a *pataḥ* lengthened in metrical epenthesis constructions by an Arabic *mater lectionis*, but sometimes omit a *mater lectionis* in the transcription of *pataḥ* with minor *gaʿya*, e.g.

وايهي (BL Or 2542, fol. 43r, 3 | L [BHS]: וַֽיְהִי Exod. 1.5 'and it was')

لاقاح لو (BL Or 2542, fol. 50r, 5 | L [BHS]: לָֽקַח־ל֛וֹ Exod. 6.25 'he took for himself')

ويّشرصو (BL Or 2542, fol. 43r, 6 | L [BHS]: וַֽיִּשְׁרְצ֛וּ Exod. 1.7 'and they swarmed')

The lengthening of the vowel before weak consonants in syllable contact in constructions with metrical epenthesis described in this section is occasionally extended by analogy to situations in which the vowel occurs before weak consonants but is not immediately followed by the syllable bearing the main stress. These often occur before *maqqef*, e.g.

אַרְבַּֽע־עֶשְׂרֵ֣ה [ʔaʀ̟ˌbaˑʕ-ʕɛsˈʀ̟eː] 'fourteen' (Gen. 31.41)

וַֽיְהִי־עֶ֥רֶב [ˌvaˑjhiː-ˈʕɛːʀ̟ev] 'and it was evening' (Gen. 1.5)

I.2.11. *MAQQEF*

The *maqqef* sign joins words that are read together as a group with a single main stress.[235] The number of words joined in this way is most frequently two, e.g.

L: אֶת־הָאֹ֖ור ‘the light’ (Gen. 1.4)

There are some cases of three, or, sporadically, even four words joined together into a single main stress group, e.g.

L: אֶת־לֵב־פַּרְעֹה֮ ‘the heart of Pharaoh’ (Exod. 14.4)

L: עַֽל־כׇּל־דְּבַר־פֶּ֜שַׁע ‘for every case of crime’ (Exod. 22.8)

There are three main factors that condition the use of *maqqef*.

(i) When there would be a clash of two main accents across two words, i.e. where one word has word-final stress and the following has word-initial stress, the stress of the first word is sometimes eliminated by joining it together with second by *maqqef*, e.g

L: אִמְרִי־לִ֖י ‘say with regard to me’ (Gen. 20.13)

L: נִמְצְאוּ־בָ֗ם ‘they were found among them’ (Jer. 41.8)

L: מְגִלַּת־סֵ֔פֶר ‘the scroll of a book’ (Jer. 36.2)

(ii) Small monosyllabic words are often attached to a following word even if there would not have been a clash of accents.

[235] For a detailed description of the use of *maqqef* see Yeivin (1980, 228–36) and the literature cited there. See also Holmstedt and Dresher (2013).

This occurs particularly frequently when the short word has a short vowel in a closed syllable, e.g.

L: אֶל־אַבְרָהָ֑ם ‘to Abraham’ (Gen. 20.10)

L: כָּל־הַדְּבָרִ֔ים ‘all the words’ (Exod. 4.30)

L: בֶּן־הָאָמָ֖ה ‘son of the slave woman’ (Gen. 21.10)

(iii) *Maqqef* that does not fall into one of the two previous categories may be motivated by the constraints of the musical accent system. This is the case where a particular disjunctive can be preceded only by a limited number of conjunctive accents. In the following extract, for example, the *ṭifḥa* can only be preceded by one conjunctive, so the two preceding words are joined together in a single accent group by *maqqef*:

L: וְאִם־רַ֧ע בְּעֵינֶ֛יךָ לָב֥וֹא־אִתִּ֖י בָבֶ֖ל חֲדָ֑ל ‘but if it seems wrong in your eyes to come with me to Babylon, desist.’ (Jer. 40.4)

As remarked, a *maqqef* after a word, in principle, deprives the word of its main stress. As a result, vowels that do not have an inherent length feature are pronounced short when they are left unstressed, e.g.

כֹּ֫ל /k^{h}ol/ [ˈk^{h}oːol], כָּל־ /k^{h}ol/ [k^{h}ɔl] ‘all’

עֹ֫ז /ʕoz/ [ˈʕoːoz], עָז־ /ʕoz/ [ʕɔz] ‘strength’ (Isa. 26.1)

תִּמְשֹׁ֫ל /t^{h}imʃol/ [t^{h}imˈʃoːol] (Gen. 37.8), תִּמְשָׁל־ /t^{h}imʃol/ [t^{h}imʃɔl] (Gen. 4.7) ‘you master’

אֵ֫ת /ʔeθ/ [ˈʔeːeθ], אֶת־ /ʔeθ/ [ʔɛθ] object marker

וַיִּתֵּ֫ן /vajjitt^{h}en/ [vaɟɟitˈt^{h}eːen], וַיִּתֶּן־ /vajjitt^{h}en/ [vaɟɟitt^{h}ɛn] ‘and he gave’

Vowels with an inherent length feature do not in principle undergo such shortening in words followed by *maqqef*, e.g.

L: בֵּית־אָבִ֫יךָ /bēθ/ [beːeθ] 'your father's house' (Gen. 24.23)

L: אִישׁ־אֶחָ֑ד /ʔīʃ/ [ʔiːiʃ] 'one man' (Gen. 42.11)

L: שְׁלֹשׁ־מֵאֽוֹת /ʃlōʃ/ [ʃaloːoʃ] 'three hundred' (Num. 31.36)

On some sporadic occasions, an inherently long *ḥolem* in a closed syllable in a word with *maqqef* is shortened to short *qameṣ*, e.g.

L: וְאִם־שְׁלָשׁ־אֵ֫לֶּה 'if these three' (Exod. 21.11)

On a number of occasions, the Karaite transcriptions omit a *mater lectionis* in their representation of inherently long *ḥolem*, *qameṣ* or *ṣere* in closed syllables in words with *maqqef*, which reflects a wider range of shortening of inherently long vowels than is represented by the Masoretic vocalization, e.g.

> شلش ميِاوِث (BL Or 2549 fol. 145v, 15 | L [BHS]: שְׁלֹשׁ־מֵאֽוֹת Ezek. 4.5 'three hundred')
>
> هذ (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹד־ Psa. 111.3 'majesty')
>
> هن (Genizah MS 13, Khan 1990a, 13 | L [BHS]: הוֹן־ Psa. 112.3 'wealth')
>
> يَم-كِنارِث (Or. 2546, fol. 118v, 5 | L [BHS]: יָם־כִּנֶּ֫רֶת Num. 34.11 'sea of Chinnereth')

لـِب-فِرعوْ (BL Or 2540, fol. 20v, 7 | L [BHS]: לֵב־פַּרְעֹה֙ Exod. 7.22 ‘the heart of Pharaoh’)

بـِث ابُوثام (BL Or 2540, fol. 17r, 2 | L [BHS]: בֵית־אֲבֹתָ֑ם Exod. 6.14 ‘the house of their fathers’)

In contrast to these indicators of prosodic reduction due to lack of stress, there are some features of words with *maqqef* that reflect an effort to pronounce such words with some degree of prosodic independence.

In some cases, for example, an intrinsically short /o/ vowel in a word with *maqqef* is represented by *ḥolem* [oː] rather than the expected short *qameṣ* [ɔ]. In the following two examples, the syllable with the *ḥolem* is marked by a *gaʿya*, reflecting a secondary stress:

L: יִגְנֹֽב־אִ֗ישׁ ‘a man steals’ (Exod. 21.37)

L: עֹֽז־לָ֑מוֹ ‘strength to them’ (Psa. 28.8)

L: רֹ֣ב־פְּשָׁעֶ֑יהָ ‘the multitude of her sins’ (Lam. 1.5)

Compound numerals with elements joined by *maqqef* generally reflect a secondary stress on the first element before the *maqqef*, either by a *gaʿya* or by a long realization of an intrinsically short vowel, e.g.

L: אַרְבַּֽע־עֶשְׂרֵ֨ה ‘fourteen’ (Gen. 14.4)

L: שְׁבַֽע־עֶשְׂרֵ֤ה ‘seventeen’ (Gen. 37.2)

L: וְשֵׁ֥שׁ־עֶשְׂרֵ֛ה ‘and sixteen’ (2 Kings 15.33)

The Masoretic treatises discuss the distribution of monosyllabic words with the intrinsically short vowels /e/ and /o/, which, in principle, are realized as the long vowels *ṣere* [eː] and *ḥolem* [oː] respectively when stressed and the short vowels *segol* [ɛ] and *qameṣ* [ɔ] when in words with *maqqef*, e.g. הֶן/הֵן, שֶׁשׁ/שֵׁשׁ, עֶת/עֵת, לֶב/לֵב, בֶּן/בֵּן, כֶּן/כֵּן, שֶׁן/שֵׁן, כָּל/כֹּל.[236] The sources point out, however, that these vowels have a long realization in a word with *maqqef* when they are separated from the main accent by at least one intervening syllable, e.g.

L: שֵׁשׁ־הַשְּׂעֹרִ֑ים 'six (measures) of barley' (Ruth 3.17)

L: שֵׁן־הַסֶּ֫לַע 'a crag of rock' (1 Sam. 14.4)

L: בֵּן־פָּרִ֥יץ 'a robber son' (Ezek. 18.10)

L: אֵֽת־כָּל־גָּבֹ֣הַּ 'everything that is high' (Job 41.26)

This, likewise, may have been conditioned by secondary stress, although a *gaʿya* is not marked on the syllable in all these cases in L, A and C.

Conversely, forms of these words with *segol* or *qameṣ* occasionally take an accent (§I.2.3.2.), e.g.

L: בֶּ֣ן יָאִ֔יר (Esther 2.5) 'son of Yair'

L: אֶ֤ת אֲרַ֣ם נַהֲרַיִם (Psa. 60.2) 'with Aram-naharaim'

L: כָּ֥ל אֲחֵי־רָ֨שׁ (Prov. 19.7) 'all the brothers of a poor man'

These may have arisen by a process of giving greater prosodic independence to a word that was originally unstressed.

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[236] E.g. *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, §§6-8), *Hidāyat al-Qārī*ʾ, long version, edition in vol. 2 of this book, §II.L.3.2.4.

There are, indeed, some variants in the sources. According to *Diqduqe ha-Ṭeʿamim* (ed. Dotan, 1967, §8), for example, the word כָּ֫ל in Psa. 87.7 has its own accent but in L it has a *maqqef* (כָּֽל־מַעְיָנַ֥י 'all my springs').

The lists of differences in *Kitāb al-Khilaf*, moreover, show that Ben Naftali in a number cases read a word with a conjunctive accent where Ben Asher read it with *maqqef* (A. Ben-David 1957b, 391–92), e.g.

Lev. 24.16:

Ben Asher: בְּנָקְבוֹ־שֵׁ֖ם, Ben Naftali: בְּנָקְב֥וֹ שֵׁ֖ם 'when he blasphemes the Name'

Gen. 39.6:

Ben Asher: יְפֵה־תֹ֭אַר, Ben Naftali: יְפֵ֥ה תֹ֭אַר 'beautiful in form'

Job 12.3:

Ben Asher: וְאֶת־מִי־אֵ֥ין, Ben Naftali: וְאֶת־מִ֗י אֵ֥ין 'with whom is not?'

This is a reflection of the general tendency of Ben Naftali to introduce a greater number of orthoepic innovations into the reading than Ben Asher, who was usually more conservative.[237]

[237] In the manuscript II Firkovitch Evr. II B 159 (referred to as L[2] by Yeivin 1980, 23) the *maqqef* sign is sometimes marked when the first word has a conjunctive accent, e.g. בְּטֶ֥רֶם־אֲבִיאֶ֔נּוּ 'before I brought them' (Deut. 31.21) and conversely a *maqqef* sign is sometimes omitted after a short word without an accent, e.g. וְאַל יָמֹ֑ת 'and may he not die' (Deut. 33.6). This appears to reflect the overlapping of two traditions with regard to the division of words.

In some cases, there are variations between the *qere* and the *ketiv* of a word with *maqqef*, e.g.

Josh. 9.7: *ketiv* אכרות לך, *qere* אֶכְרָת־לְךָ֣ ‘I make (a covenant) for you’

Hosea 8.12: *ketiv* אכתוב לו, *qere* אֶ֨כְתָּב־ל֔וֹ ‘I write for him’

In such cases, the *ketiv* with *mater lectionis vav* reflects a reading with greater prosodic independence that the *qere*.

In the early manuscripts, when a word with *maqqef* ends in an open syllable and the subsequent word has the stress on its initial syllable, the final open syllable of the first word often has a *gaʿya* (Yeivin 1968, 165; 1980, 250), e.g.

L: כִּֽי־אֵ֥שׁ (Jer. 17.4) ‘for fire’

A: אַנְשֵֽׁי־חַ֨יִל֙ (Nah. 2.4) ‘men of strength’

The occurrence of secondary stress on the syllable immediately adjacent to the main stress implies that the two words were separated somewhat, since otherwise there would be a clash of prominent accent syllables. The metrical structure of a phrase such as כִּֽי־אֵ֥שׁ, therefore, may be represented as follows:

[(ˌkʰiː)(∅)(ˈʔeːeʃ)]

A metrical epenthesis of an intervening interval between the two prominent syllables can be assumed to have occurred. This is analogous to the analysis of the metrical structure of words such as יְשַֽׁעְיָ֫הוּ [jaˌʃaˑʕ∅ˈjɔːhuː], in which metrical epenthesis makes a clear division between weak consonants (§I.2.10.).

In the discussion of *deḥiq* above in §I.2.8.1.2. we have seen that the vowel in a final open syllable in a word with *maqqef* is

given sufficient duration to be represented by the Karaite transcriptions with a *mater lectionis*. This applies even to the *pataḥ* in constructions with the interrogative word מה, which must have been short at some earlier period, e.g.

L: מַה־לָּ֣ךְ [maˑ-ˈllɔːɔχ] (Gen. 21.17) ‘What [is] to you (fs)’

This was a strategy of making a clear division prosodically between the orthographically separate word with *maqqef* and the word following it. Another strategy to achieve the same purpose that is reflected by some of the Karaite transcriptions was to glottalize the offset of the *pataḥ* vowel of מה. This is represented by an Arabic *hāʾ*, e.g.

مه-شّماخا [mah-ʃʃaˈmɛːχɔː] (BL Or 2544 fol. 33v, 1 | L [BHS]: מַה־שְּׁמֶ֑ךָ Gen. 32.28 ‘What is your name?’)

مه-شّمُو [mah-ʃʃaˈmoː] (BL Or 2544 fol. 76v, 12 | L [BHS]: מַה־שְּׁמ֔וֹ Exod. 3.13 ‘What is his name?’)

مه-زّا [mah-ˈzzɛː] (BL Or 2544 fol. 79v, 8 | L [BHS]: *ketiv* מזה, *qere* מַה־זֶּ֣ה Exod. 4.2 ‘What is this?’)

مه تاعيرو وما تعوررو [mah-ttʰɔːˈʕiːʀ̟uː ˌwuˑmah-ttʰoʕoːʀ̟aˈʀ̟uː] (BL Or 2554 fol. 86v, 11 | L [BHS]: מַה־תָּעִ֧ירוּ ׀ וּֽמַה־תְּעֹרְר֥וּ Cant. 8.4 ‘What do you stir up and what do you awaken?’)

مه شاهايا [mah-ʃˌʃɛːhɔːˈhɔː] (BL Or 2555 fol. 12v, 1 | L [BHS]: מַה־שֶּֽׁהָיָ֗ה Ecc. 3.15 ‘that which was’)

Such glottalization involves the devoicing of the offset of the vowel, which is a cross-linguistically attested device for marking divisions between prosodic words.[238]

Glottalization of final vowels as a strategy to separate words joined by *maqqef* is attested in other contexts in the Karaite transcriptions, e.g.

> نقراه شمى [niq̟ˌʀ̟ɔˑh-ʃaˈmiː] (Genizah MS 14, Khan 1990a, 2r, 8 | L [BHS]: נִקְרָֽא־שְׁמִ֖י Jer. 32.34 'My name is called')

Evidence for glottalization of word-final vowels can also be found in the use of the *dagesh* sign in some manuscripts with Palestinian vocalization, e.g. מהּ לי (Revell 1970a, 21). The use of the element [h] as a pausal device is reminiscent of the Arabic *hāʾu al-sakt*, which was used to preserve a final short vowel from being elided in pause, especially in the recitation of poetry.[239] A number of instances of it occur in the Qurʾānic reading tradition of Ibn Kathīr.[240]

I.2.12. Further Cases of Second Accents in a Word on Closed Syllables with Short Vowels

In some cases, a word contains an accent sign on a closed syllable before the accent marking the main stress.

[238] See, for example, Vayra (1994) for this function of glottalization in Italian and Khan (2016b vol. 1, 144-45) for Neo-Aramaic.

[239] Birkeland (1940, 31–45), Roman (1983, 494–501).

[240] Nöldeke et al. (1938, vol. 3, 199), Ibn Khālawayh (ed. Bergsträsser, 1934, 109).

We have seen (§I.2.5.8.5.) that *merkha* often occurs in the three books on closed syllables containing short vowels with the function of a phonetic *gaʿya* in order to lengthen the vowel and cause the following *shewa* to be read as vocalic, e.g.

L: תִּ֥בְחַ֣ר ‘you choose’ (A: תִּ֥בְֽחַ֣ר, Psa. 65.5)

L: תִּ֥לְעַ֣ג ‘it mocks’ (A: תִּ֥לְֽעַ֣ג, Prov. 30.17)

Under certain conditions (Yeivin 1980, 185) a *zaqef* accent is preceded in the same word by a *metiga* accent on a closed syllable with a short vowel that is separated from the main *zaqef* accent by another syllable, e.g.

L: וּבַ֨בִּזָּ֔ה ‘and on the plunder’ (Esther 9.10)

L: וּמִ֨קְצָתָ֔ם ‘at the end of them’ (Dan. 1.5)

The Karaite transcriptions do not represent the vowel of the syllable with *metiga* with an Arabic *mater lectionis*, e.g.

وَيّبقع صُور (BL Or 2548 fol. 128r, 5 | L [BHS]: וַיִּ֨בְקַע־צ֔וּר Isa. 48.21 ‘and he cleaved the rock’)

ومْقصاثام (BL Or 2556, fol. 2v, 5 | L [BHS]: וּמִ֨קְצָתָ֔ם Dan. 1.5 ‘at the end of them’)

لزرعخا (BL Or 2539 MS A, fol. 70v, 4 | L [BHS]: לְזַ֨רְעֲךָ֔ Gen. 24.7 ‘unto your seed’)

The same applies to accents on short vowels in closed syllables before the main stress in the three books, such as the first accent of the composite *reviaʿ mugrash*. Transcriptions such as the

following show that the vowel was not lengthened by the first accent:

> منسلاحث (BL Or 2551, fol. 31r, 3 | L [BHS]: מִשְׁלַ֫חַת Psa. 78.49 ‘delegation’)

This suggests that *metiga* and the first element of composite accents in the three books did not represent a secondary stress beat, but rather some musical phenomenon that did not result in the lengthening of the vowel.

I.3. *DAGESH* AND *RAFE*

I.3.1. *DAGESH*

I.3.1.1. Preliminary Remarks

Dagesh is a dot that is marked within a letter. It is in origin an Aramaic active participle meaning ‘stabbing’ from the Aramaic root *d-g-š* ‘to stab’. This referred, it seems, to the ‘stabbing’ of the letter by the pen when the sign was marked.

The *dagesh* sign was used mainly in two contexts. These are (i) on a consonant that was geminated (traditionally referred to in modern grammars as *dagesh forte*) and (ii) on the consonants בגדכפת when they were realized as plosives (traditionally referred to as *dagesh lene*).[1] In both cases the letter with *dagesh* was pronounced with greater pressure than its counterpart without *dagesh*.

The majority of consonants in the Tiberian pronunciation tradition could be marked with a *dagesh*.

[1] Our terms *dagesh forte* and *dagesh lene* go back to David Qimḥi (1160-1235), who uses the Hebrew terms דגש חזק (*dagesh forte*) and דגש קל (*dagesh lene*) in his *Mikhlol*. The terms דגש חזק and דגש קל are used also by Yequtiʾel ha-Naqadan, who was active in medieval Ashkenaz in the second half of the thirteenth century. He does not mention David Qimḥi’s *Mikhlol*, which was written earlier, but it is possible that Yequtiʾel borrowed this terminology from Qimḥi (Yarqoni 1985, 105–13).

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Dagesh is not marked, however, on the laryngeals and pharyngeals (אהעח) in the Standard Tiberian tradition, except in a few isolated cases to ensure correct reading (e.g. the *dagesh* in *ʾalef* in four words, see §I.1.1.). In principle, therefore, these consonants are not geminated.

The letter *resh*, like the laryngeal and pharyngeal consonants, is generally not geminated by *dagesh*. Occasionally, however, the *resh* does have *dagesh*, e.g.

L: לֹא־כָרַּ֣ת שָׁרֵּ֔ךְ ‘your navel string was not cut’ (Ezek. 16.4)

L: מָרַּ֣ת נַפְשׁ֑וֹ ‘the bitterness of its soul’ (Prov. 14.10)

L: שֶׁרֹּאשִׁי֙ ‘because my head’ (Cant. 5.2)

L: מְא֣וּמָה רָּ֑ע ‘anything bad’ (Jer. 39.12)

L: הַרְּעִמָ֑הּ ‘to irritate her’ (1 Sam. 1.6)

When it is marked in cases such as these, it should be identified as *dagesh forte*, indicating the gemination of the consonant. In the attested examples, the *resh* with *dagesh* in the Tiberian Masoretic tradition would have had its primary realization as an uvular trill according to the rules that have come down to us from the medieval sources (§I.I.1.20.). This does not appear, however, to have been a relevant conditioning factor for the *dagesh*. Some Middle Eastern Jewish communities pronounce the *resh* as geminate in their biblical reading where the *dagesh* was marked, but in all cases they pronounce the *resh* as an apical-alveolar.[2]

In medieval manuscripts of Rabbinic Hebrew that belong to the eastern tradition of transmission, *dagesh* is marked on *resh*

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[2] Morag (1960, 207–8).

more frequently than it is in the Tiberian biblical text.[3] The tendency to mark *dagesh* is greater in some eastern manuscripts than in others. It is particularly common in the Parma B manuscript of the Mishnah. The *dagesh* is marked on *resh* after the relative particle שֶׁ *še* and on the medial *resh* of a number of verbal and nominal morphological patterns with a geminated middle radical, e.g. עִירֵּב 'he mixed' (*piʿel*) and מְעוּרֶּבֶת 'mixed' (*puʿal*), סַרָּגִין 'weavers.'[4] The *resh* is pronounced geminated in a similar range of contexts in Middle Eastern reading traditions of Rabbinic Hebrew that have survived into modern times, e.g. Aleppo [ʃerrɑʔaˈta] (שֶׁרָּאֲתָה) 'who has seen (fs)' (*Berakhot* 3.6), [ʕərˈreːβ] (עִרֵּב) 'he created an *ʿeruv*' (*ʿEruvin* 2.6), [leharraˈgin] 'to murderers' (לְהַרָּגִין) (*Nedarim* 3.4).[5] The gemination is more widespread in some traditions than in others. Also in verbal and nominal patterns with a geminated middle radical it tends to be restricted to certain verbal roots and lexical items, as is the case in the medieval manuscripts. Sometimes there are variations within the same root that are exploited to express a semantic distinction. In Jerba, for example, the *resh* in the root ערב is geminated in the *piʿel* when it has the meaning of mixing one thing with another, but it is not geminated when it has the sense of creating an *ʿeruv*. Morag believes that the lack of consistency in the gemination of the *resh* across the traditions of Rabbinic reading and within

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[3] Bar-Asher (1987).

[4] Bar-Asher (1987, 13–14).

[5] Katz (1981, 32–36).

individual traditions may have been the result of varying degrees of influence from biblical reading traditions.[6]

The *dagesh* in the *resh* in the Tiberian biblical tradition in a case such as שֶׁרֹּאשִׁי֙ ‘because my head’ (Cant. 5.2) after the particle -שֶׁ, which corresponds to one of the contexts where it occurs in the eastern Rabbinic traditions, suggests that the tradition of gemination of this letter is of considerable time depth. It is likely to have had its origin at a period when Hebrew was a living language, assuming that Rabbinic Hebrew originated in the vernacular of the Tannaitic period. Its occurrence here may reflect the influence of spoken Hebrew at the time of the formation of the Tiberian reading tradition, the particle -שֶׁ itself being a feature of Rabbinic Hebrew.

I.3.1.2. Morphological Gemination

A *dagesh* may reflect gemination that is a feature of the morphological pattern of a word. This typically occurs in the second radical of the root, e.g. בִּקֵּשׁ ‘he sought’, גַּנָּב ‘thief’, חַנּוּן ‘gracious’. A possible case of morphological gemination of *resh* in the Tiberian biblical tradition is לֹֽא־כָרַּ֣ת שָׁרֵּ֔ךְ ‘your navel string was not cut’ (Ezek. 16.4).

Morphological gemination also includes gemination that is inherent to the root. When a root has identical consonants as its two final radicals, these appear as a geminated consonant with *dagesh* when adjacent to each other before an affix. This

[6] Morag (1960, 208–16).

gemination does not occur in word final-position when the stem does not have an affix, e.g.

עַמִּים 'peoples', עַמּוֹ 'his people'; cf. sing. עַם < *ʿ*amm*

גַּנִּים 'gardens', גַּנּוֹ 'his garden'; cf. sing. גַּן < **gann*

I.3.1.3. *Dagesh* to Distinguish Meaning

In various cases, gemination of a consonant reflected by a *dagesh* sign is used in the Tiberian tradition as a strategy to distinguish homophones (Yeivin 1980, 49, 294).

This may be contextually dependent. When, for example, the negator לֹא is juxtaposed with the homophonous prepositional phrase לוֹ a *dagesh* is added to the negator to distinguish the two, e.g.

L: לְּא לְוֹ יִהְיֶ֣ה הַזָּ֑רַע ['llo: 'lo:] 'The offspring would not be his' (Gen. 38.9)

L: עַל־רִ֥יב לְּא־לְוֹ [ˌllo:-'lo:] 'in an argument that is not his' (Prov. 26.17)

Gemination to distinguish homophones, however, is generally a permanent feature of the morphological pattern. It can be regarded, therefore, as a type of morphological gemination. Examples of this include cases such אֲבִיר 'powerful' referring to God, used in phrases such as אֲבִיר יַעֲקֹב 'the Mighty One of Jacob' (Gen. 49.24, Isa. 49.26, Isa. 60.16, Psa. 132.2, 5) vs. אַבִּיר 'powerful', used to refer to humans, עֲצָבִים 'toils' vs. עֲצַבִּים 'idols', יָנִיחַ 'he gives rest' vs. יַנִּיחַ 'he places', תָּלִינוּ 'you spend the night' vs. תַּלִּינוּ 'you murmur against', and the historical gemination

separating the pairs יָחֵל 'he begins' (Jud. 10.18) vs. יַחֵל 'he profanes' (Num. 30.3).[7] The gemination in these pairs of forms most likely originates in existing variant morphological patterns that have been exploited to avoid homophony.[8]

The gemination marked by *dagesh* in the interjection word אָנָּ֫ה (also written אָנָּ֫א) may have been a device to distinguish it from אָ֫נָה 'to where?.'[9]

The use of *dagesh* to distinguish the meaning of homophones or polysemous words is more frequently encountered in the Babylonian tradition of Biblical Hebrew (Yeivin 1985, 355–63). In Babylonian vocalization, a *dagesh* (known as *digsha* in the Babylonian tradition) is represented by a superscribed minute *gimel* and *rafe* (known as *qipya*) by a superscribed minute *qof*.

In many cases in the Babylonian tradition a *dagesh* is added to distinguish between the use of a word that has an association with God and the use of the same word that has an association with humans (often with negative connotations) or foreign gods. This has been seen already in the Tiberian tradition in pairs such as אַבִּיר vs. אֲבִיר and עֲצַבִּים vs. עֲצָבִים. As in the Tiberian tradition, the *dagesh* is used in the Babylonian tradition in the member of the pair associated with humans or foreign gods. The word

[7] Yeivin (1985, 361–63).

[8] A few cases of a *dagesh* that appear in the BHS edition and were identified by Knauf (1979) as serving to distinguish meaning have recently been shown by Golinets (2013, 247–52) to be no more than specks on the parchment of the manuscript.

[9] Yeivin (1985, 1119).

אלוהים, for example, is marked with *dagesh* when it refers to foreign gods (Yeivin 1985, 357, 909–10), e.g.[10]

אלּׂהים (OB | L [BHS]: אֱלֹהִ֥ים אֲחֵרִ֔ים Deut 11.16 'other gods')

אלּׂהי (OB | L [BHS]: אֱלֹהֵ֥י מִצְרַ֖יִם Exod. 12.12 'the gods of Egypt')

The *dagesh* is used also in the cognate word in Biblical Aramaic when it refers to foreign gods, e.g.

לאּׂלּהי דהבא (MB | L [BHS]: לֵֽאלָהֵ֞י דַּהֲבָ֧א Dan 5.4 'the gods of gold')

The word כהנים is marked with a *dagesh* when it refers to 'priests of foreign gods' (Yeivin 1985, 358), e.g.

הכּׂהנּים (MB | L [BHS]: הַכֹּהֲנִֽים Zeph 1.4 'the priests')

כּׂהנּים (MB | L [BHS]: וַתַּעֲשׂ֨וּ לָכֶ֤ם כֹּהֲנִים֙ כְּעַמֵּ֣י הָאֲרָצ֔וֹת 2 Chron. 13.9 'and you will make for yourselves priests like the peoples of the lands')

A *dagesh* is used elsewhere in manuscripts with Babylonian vocalization to mark other types of semantic distinctions of homophones. It is frequently marked on the prepositional phrase לו, for example, to distinguish it from the homophone לא (Yeivin 1985, 1132–33), e.g.

ישלם לּו (OB | L [BHS]: מִֽי יְשַׁלֶּם־לֽוֹ Job 21.31 'who will repay him')

[10] Data supplied by Shai Heijmans. OB = Old Babylonian, MB = Middle Babylonian.

לאוׂיב לׂוֹ (OB | L [BHS]: לְאוֹיֵ֣ב לֽוֹ Job 33.10 'as an enemy for him')

This includes cases where the *qere* is לׂוֹ but the *ketiv* is לא, e.g

ולׂא (OB | *ketiv* ולא־שֵׁ֖ם, *qere* וְלֽוֹ־ 1 Chron. 11.20 'and he has a name')

Other cases include, for example, a *dagesh* on the word נא in Exod. 12.9, where it denotes 'raw', to distinguish it from נא expressing a request (Yeivin 1985, 357) and a *dagesh* on the *resh* of עריך 'your enemy' in 1 Sam. 28.16 presumably to distinguish it from the plural of ערים 'towns' (Yeivin 1985, 354):

מׂמׂנוׂ נׂא (OB | L [BHS]: אַל־תֹּאכְל֤וּ מִמֶּ֙נּוּ֙ נָ֔א Exod. 12.9 'do not eat any of it raw')

עׂרׂךׂ (OB | L [BHS]: עָרֶֽךָ 1 Sam. 28.16 'your enemy')

The examples of *dagesh* functioning to distinguish meaning in the Babylonian tradition cited above are most easily interpreted as innovative additions to existing forms rather than morphological variants. It should be noted that in some cases the *dagesh* is marked after a long vowel, e.g. עׂמׂל, עׂרׂךׂ. The question arises as to whether these *dagesh* signs reflect gemination or are simply diacritical signs. Yeivin (1985, 355–63) believes they indeed have the function of *dagesh forte*. There is, moreover, objective evidence of gemination of *dagesh* to distinguish meaning in the Tiberian tradition in forms with a long vowel such as אָנָּה by the marking Arabic *shadda* in the Karaite transcriptions, e.g.

انّا (BL Or 2556, fol. 40r, 9 | L [BHS]: אָנָּא Neh. 1.5. ‘Oh!’)[11]

There is also evidence of morphophonemic restructuring by means of innovative gemination in a variety of other reading traditions, including those that have come down to modern times in oral form.

The function of gemination to distinguish meanings of homophones is identifiable, for example, in the reading traditions of Rabbinic Hebrew that are reflected in the early vocalized manuscripts of the Mishnah. Kutscher (1969, 56, 76) drew attention to the following pair of words in the Kaufmann manuscript:

חֲתִיכָה ‘cutting’ vs. חֲתִיכָּה ‘piece’

The use of the pattern with *dagesh* to distinguish the concrete entity that is the result of the cutting from the verbal noun of the same root is likely to have developed by analogy with other nouns with the morphological pattern *CCiCCa* that express concrete entities in Rabbinic Hebrew (Bar-Asher 2015, 1342).

Various cases of gemination to distinguish meaning have been identified in the living oral tradition of Rabbinic Hebrew of the Yemenite Jews and the Hebrew component in their speech by Gluska (1995). These include distinctions between verbal forms and nouns, in which the noun has the gemination, e.g.

[11] In this manuscript initial *ʾalef* + long *qameṣ*, i.e. [ʔɔː], is represented by a single Arabic *ʾalif*. In Biblical Aramaic a long vowel is more widely tolerated in an unstressed syllable closed by a geminated consonant, e.g. עָלִּין ‘they enter’ (Dan. 4.4 *qere*); cf. also Syriac *ʿāllīn* (Nöldeke 1869, 457).

גְּבִינָה 'making cheese' vs. גְּבִנָּה 'cheese (noun)'

חָיִים 'living (3pl. verbal adjective)' vs. חַיִּים 'life (noun)'

Morag (1996) draws attention to some uses of gemination to distinguish meaning in the living oral tradition of Aramaic among the Yemenite Jews, e.g.

חַיָּא 'living' (referring to God) vs. חַיָא 'living' (referring to humans)

In the Samaritan oral tradition of reading the Pentateuch there are numerous examples of morphophonemic restructuring to distinguish homophones.[12] These include the strategy of distinguishing forms by the addition of gemination to one of the pair, e.g.

ʿā:rəm 'the cities' (Tiberian הֶעָרִים) vs. ʿarrəm 'cities' (Tiberian עָרִים)[13]

wå̄må 'and the cubit' (Tiberian וְהָאַמָּה) vs. wåmmå 'and a cubit' (Tiberian ואַמָּה)[14]

å̄då̄ni 'Lord' (divine) vs. å̄danni 'master' (human)[15]

å̄:sīdå 'the stork' (animal) (Tiberian הַחֲסִידָה Lev. 11.19) vs. assidåk 'your pious one' (human) (Tiberian חֲסִידֶךָ Deut. 33.8)[16]

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[12] See in particular Florentin (1996) for examples of this phenomenon.

[13] Ben-Ḥayyim (2000, 92).

[14] Ben-Ḥayyim (2000, 92).

[15] Ben-Ḥayyim (1957a-77 vol. 4, 8-9, vol. 5, 194, 2000, 260).

[16] Florentin (1996, 231).

yamən 'Yamin' (proper name) (Tiberian יָמִ֣ין Gen. 46.10) vs. yammən 'right hand' (Tiberian יָמִין)[17]

wyå̄båd 'and he perished (past)' (Tiberian וַיֹּאבַד) vs. yå̄bbåd 'he perishes (non-past)' (Tiberian יֹאבַד)[18]

I.3.1.4. Gemination Resulting from Assimilation

In some cases, gemination has resulted from the process of a consonant assimilating another consonant with which it is contact. This typically occurs at the boundary between the stem of a word and an affix. It also functions, therefore, as a marker of a morphological boundary, e.g.

יִפֹּ֫ל [jip-ˈpʰoːol] 'he falls' < **yinpol*

נָתַ֫תְּ [nɔːˈθaːatʰ-tʰ] 'you (fs) gave' < **natant*

מִשָּׁ֫ם [miʃ-ˈʃɔːɔm] 'from there' < מִן שָׁם

יִקַּ֫ח [jiq̟-ˈq̟aːaħ] 'he takes' < **yilqaḥ*

וְתִכּוֹנֵ֫ן (Num. 21.7) [vaθikʰ-kʰoːˈneːen] 'and let it be established' < תִּתְכּוֹנֵן

[17] Florentin (1996, 234).

[18] Florentin (1996, 218). This particular minimal pair is not attested in the Samaritan Pentateuch, but it can be inferred from the contrasting patterns used for the attested forms of the past and non-past, e.g. wyå̄bå̄du וַיֹּאבְדוּ 'and they perished' (Num. 16.33) vs. tå̄bbåd תֹּאבַד 'it becomes lost' (Deut. 22.3).

I.3.1.5. Gemination to Preserve High Lexical Vowels

In a number of cases a consonant after a high lexical vowel, most commonly /u/, though occasionally /i/, has been geminated to preserve it. High lexical vowels exhibit a higher tendency to be reduced to an epenthetic *shewa* than low vowels:

I.3.1.5.1. After *qibbuṣ*

עֲמֻקָּה, עֲמֻקִּים 'deep (fs, mpl)'; cf. ms. עָמוֹק **ʿamuq*

אֲדֻמָּה, אֲדֻמִּים 'red (fs, mpl)'; cf. ms. אָדוֹם **ʾaðum*

עֵירֻמִּם (Gen. 3.7) 'naked' (mpl); cf. ms. עֵירוֹם **ʿērum*

קַרְדֻּמּוֹ (1 Sam. 13.20) 'his axe'; cf. sing. קַרְדּוֹם **qardum*

This can be identified in various *puʿal* forms verbs that appear to be in origin passives of the *qal* pattern without morphological gemination (Gesenius, *Hebrew Grammar*, §52e):

אֻכְּלוּ 'they have been eaten' (Neh. 2.3) < **ʾukalū*

לֻקַּח 'he was taken' (Gen. 3.23) < **luqaḥ*

וְשֻׁפַּךְ 'and it will be poured' (Zeph. 1.17) < **šupak*

I.3.1.5.2. After *ḥireq*

אִסָּר 'bond' < **ʾisār*

I.3.1.6. Gemination of a Consonant in Place of Vowel Lengthening

In a number of cases, a consonant is geminated after an original short **a*. This is attested predominantly at a morphological

boundary between the stem of a noun or adjective and an inflectional suffix. As a result, the vowel remains short and does not undergo pretonic lengthening, as would have typically been the case if the **a* was in an open pretonic syllable, e.g.

גְּמַלִּים ‘camels’; cf. sing. גָּמָל

קְטַנִּים ‘small (mpl)’; cf. ms. קָטָן

מְעַטִּים ‘few’; cf. ms. מְעַט

אֲגַמִּים ‘marshes’; cf. sing. אֲגַם

הֲדַסִּים ‘myrtles’; cf. sing. הֲדַס

עַקְרַבִּים; cf. sing. עַקְרָב ‘scorpion’

נִכְבַּדֵּי (Isa. 23.8) ‘honoured of’; cf. ms. נִכְבָּד

מִשְׂגַּבִּ֑י (Psa. 18.3) ‘my stronghold’; cf. sing. מִשְׂגָּב

מַֽעֲמַקֵּי (Isaiah 51.10) ‘the depths of’

בִּפְלַגּ֣וֹת (Jud. 5.15) ‘among the clans’

מַטְעַמִּ֖ים (Gen. 27.4) ‘tasty foods’

מַחֲמַדִּ֑ים (Cant. 5.16) ‘desirable things’

In the following the **a* vowel undergoes attenuation to a *ḥireq*:

וְהַמֹּרִגִּ֥ים (2 Sam. 24.22) ‘and the threshing-sledges’; cf. sing. לְמוֹרַ֤ג (Isa. 41.15)

Historical gemination of this nature can be reconstructed for *ḥet* in various forms where this letter is now preceded by *pataḥ*, e.g.

בַּחוּרִים (< **baḥḥūrīm*) ‘young men’; cf. sing. בָּחוּר (< **bāḥūr*)

מִבְטַחִים (< **mibṭaḥḥīm*) ‘confidences’; cf. sing. מִבְטָח (< **mibṭāḥ*)

אַחִים (< **ʾaḥḥīm*) ‘brothers’; cf. sing. אָח (< **ʾāḥ*)

I.3.1.7. Gemination Associated with Stress

In a few verbal forms, a final sonorant radical is geminated when preceded by a main stress accent and followed by an inflectional suffix, e.g.

חָדֵ֫לּוּ (Jud. 5.7) ‘they ceased’

וְיִחֵ֫לּוּ (Job 29.21) ‘and they waited’

רֹ֫מּוּ (Job 29.12) ‘they are lofty’

נָתָ֫נּוּ (Ezek. 27.19) ‘they gave’

I.3.1.8. Gemination after a Prefix

In some cases, gemination occurs at the boundary between a prefixed particle and the stem of a word, e.g.

בַּמֶּ֫ה ‘in what?’ < **ba* + *mā*

כַּמֶּ֫ה ‘how much?’ < **ka* + *mā*

עַ֣ד שַׁקַּ֫מְתִּי (Jud. 5.7) ‘until you (fs) arose’ < **ša* + stem

שֶׁרֹּאשִׁי ‘because my head’ (Cant. 5.2) < **šɛ* + stem

We can include here לָ֫מָּה ‘why’ < **la* + *ma*. The gemination in this word is also associated with stress on the preceding syllable (see §I.3.1.7.), since it, in principle, does not occur in variant forms in which the stress occurs on the final syllable, e.g.

לָ֣מָּה (Exod. 5.22). Gemination, however, still occurs when the word has *maqqef* and so is unstressed, e.g. לָ֣מָּה־ (Prov. 17.16).

Another possible case of this type of gemination is the *dagesh* that occurs after the prefixed conjunction *vav* in the וַיִּקְטֹ֫ל [vaɟɟiq̟ˈtˁoːol] verbal form. Another motivation for the *dagesh* here, however, is likely to be to distinguish the meaning of this form from the potentially homophonous but semantically distinct form וְיִקְטֹ֫ל (§I.I.3.1.3.).

Gemination is occasionally used as a strategy to mark a morphological boundary between the interrogative particle *he* and what follows, when the following word begins with *shewa*, e.g.

> הַכֶּר־נָ֗א הַכְּתֹ֧נֶת בִּנְךָ֛ הִ֖וא [hakkʰaˈθoːnɛθ] 'acknowledge now whether it is your son's robe' (Gen. 37.32)
>
> הַרְּאִיתֶם֙ [haʀʀ̟iʔiːˈθɛːɛm] 'Have you seen?' (1 Sam. 10.24)
>
> הַכְּצַעֲקָתָ֛הּ [hakkʰɑsˁɑːʕɑq̟ɔːˈθɔːh] 'Is it according to its outcry' (Gen. 18.21)
>
> הַבְּמַֽחֲנִ֖ים [habbamaːħaˈniːim] 'is it in camps?' (Num. 13.19)

When the word following interrogative *he* begins with a guttural, the particle has a full *pataḥ* vowel or, before *qameṣ*, a full *segol*. These were pronounced as long vowels and can be regarded as substitutes for gemination of the initial guttural, e.g.

> הַעְוֹד [haːˈʕoːoð] 'is here still' (Gen. 31.14)
>
> הַאֵלֵ֗ךְ [haːʔeːˈleːeχ] 'shall I go' (Exod. 2.7)
>
> הֶֽאָנֹכִ֗י [hɛːʔɔːnoːˈχiː] 'Is (it the case that) I …' (Job 21.4)

I.3.1.9. Gemination at Word Boundaries (*Deḥiq*)

The phenomenon known as *deḥiq* (Aramaic 'compressed') has been described in §I.2.8.1.2. This involves the gemination of a word-initial consonant after an unstressed vowel in the preceding word, e.g.

וְאָעִ֫ידָה בָּ֫ם 'I shall cause to witness against them' (Deut. 31.28)

תַּעֲשֶׂה־לְּךָ֣ 'you make for yourself' (Prov. 24.6)

Hidāyat al-Qāriʾ includes constructions with the interrogative word מה such as the following in the category of *deḥiq*:

מַה־זֹּ֑את 'what is this?' (Exod. 13.14)

In all cases in the Tiberian tradition the final vowel of the word before the geminated consonant was pronounced long but with reduced duration. In other traditions of Hebrew, there is evidence that the final vowel was pronounced short (see §I.2.8.1.2. for details). The *dagesh* exhibits properties of the *dagesh* in forms such as בַּמֶּ֫ה 'in what?', in which it marks the boundary between morphemes, and the *dagesh* in forms such as גְּמַלִּים 'camels', where it substitutes for the lengthening of the preceding vowel. Also in words such as גְּמַלִּים 'camels', as remarked above, the *dagesh* coincides with a morpheme boundary. The *dagesh* of *deḥiq* can, therefore, be identified as primarily a marker of a boundary between two words that were closely connected prosodically. In the Tiberian tradition, efforts were made to make a clear prosodic division between the words also by maintaining some degree of vowel length in the final vowel or, in the case of

constructions with מַה־, by introducing length in a fully shortened vowel.

I.3.1.10. The Distribution of the Fricative and Stop Variants of the Letters בגדכפת

For the distribution of the fricative and stop variants of בגדכפת consonants within words, see §I.1.25.

When a בגדכפת consonant occurs at the beginning of a word and the preceding word ends in a vowel, the general rule is that the consonant is fricative if the accent of the preceding word is conjunctive or if the preceding word is connected by *maqqef*, but is plosive if the accent of the preceding word is disjunctive, e.g.

שְׁלֹשָׁ֥ה בָנִ֑ים [ʃaloːˈʃɔː vɔːˈniːim] 'three sons' (Gen. 6.10)

זָכָ֥ר וּנְקֵבָ֖ה בְּרָאָ֑ם [zɔːˈχɔːɔʀ̟ wunqeːˈvɔː baʀ̟ɔːˈʔɔːɔm] 'male and female he created them' (Gen. 5.2)

נִמְצְאוּ־בָ֔ם [nimsˤuʔuː-ˈvɔːɔm] 'they were found among them' (Jer. 41.8)

There are several exceptions to this principle. These are mentioned in the Masoretic treatises[19] and include the following.

(i) When a *paseq* occurs after a word with a conjunctive accent, e.g.

עָשׂ֣וּ ׀ כָּלָ֑ה 'They have done completely' (Gen. 18.21)

[19] Cf. *Hidāyat al-Qāriʾ*, long version, edition in volume 2 of this book, §II.L.1.7., short version, edition in volume 2 of this book, §II.S.2.0. A version of these exceptions appears also in the Hebrew Masoretic treatise published by Ginsburg (1885, 36-37).

יוֹסֵ֨ף יְהוָ֤ה עַל־עַמּוֹ֙ ׀ כָּהֵ֔ם ‘May the Lord add to his people (a hundred times as many) as them’ (1 Chron. 21.3)

(ii) When the first word ends in a consonantal *vav*, the בגדכפת letter at the beginning of the next word is normally a plosive, as it is after words ending in other consonants, e.g.

חֲצֵרֹתָ֥יו בִּתְהִלָּ֑ה ‘(enter) his courts with praise’ (Psa. 100.4)

אֵלָ֥יו פִּֽי־קָרָ֑אתִי ‘I cried aloud to him’ (Psa. 66.17)

There are, however, two cases where the בגדכפת consonant is fricative after consonantal *vav*:

וְנָטָ֥ה עָלֶ֛יהָ קַו־תֹ֖הוּ ‘He will stretch the line of confusion over it’ (Isa. 34.11)

וְק֤וֹל הָמוֹן֙ שָׁלֵ֣ו בָ֔הּ ‘The sound of a carefree multitude was with her’ (Ezek. 23.42)

(iii) When the first word ends in a consonantal consonant *yod*, the בגדכפת letter at the beginning of the next word is normally a plosive, e.g.

אוּלַ֖י תַּעֲרֽוֹצִי ‘perhaps you may inspire terror’ (Isa. 47.12)

כִּ֥י מִי־ג֖וֹי גָּד֑וֹל ‘for what great nation’ (Deut. 4.7)

לְגוֹי־גָּד֥וֹל וְעָצ֖וּם ‘into a great and mighty nation’ (Num. 14.12)

There is one exception to this:

אֲדֹנָ֥י בָ֗ם ‘the Lord in them’ (Psa. 68.18)

(iv) If two *bet*s or *kaf*s follow one another and under the first of them there is a vocalic *shewa*, then the first of the pair is plosive even when the preceding word ends in a vowel and has a conjunctive accent, e.g.

וַיְהִ֣י בְּבוֹאָ֔הּ ‘and when she came’ (Josh. 15.18)

וַתִּתְפְּשֵׂ֥הוּ בְּבִגְד֖וֹ ‘and she caught him by his garment’ (Gen. 39.12)

הֲלֹ֖א כְּכַרְכְּמִ֥ישׁ ‘Is it not like Carchemish?’ (Isa. 10.9)

If a vowel occurs under the first of the two consonants rather than *shewa*, the first remains fricative according to the usual rule, e.g.

וְה֕וּא אִשָּׁ֥ה בִבְתוּלֶ֖יהָ ‘And he (shall take) a wife in her virginity’ (Lev. 21.13)

וְאַנְשֵׁ֣י בָבֶ֗ל ‘men of Babylon’ (2 Kings 17.30)

We can generalize and say two fricative *bet*s or *kaf*s are avoided in syllable onsets in the same foot (feet indicated below by round brackets, extrametrical syllables are in angled brackets):

בְּבִגְד֖וֹ [(ba.viʁ.)(ˈdoː)]

בָבֶ֗ל [(vɔː.)(ˈvɛː.ɛl)]

בִבְתוּלֶ֖יהָ [(viv.)(θuː.)(ˈlɛː.)<hɔː>]

A further factor is that the initial *bet* and *kaf* in constructions such as בְּבִגְד֖וֹ and כְּכַרְכְּמִ֥ישׁ are prepositional affixes. Other בגדכפת consonants that are not prepositions under the same conditions remain fricative, e.g.

וּבְנֵ֣י דְדָ֔ן ‘and the sons of Dedan’ (Gen. 25.3)

לֹֽא־תְתַעֵ֣ב ‘you shall not abhor’ (Deut. 23.8)

The plosive pronunciation of the *bet* and *kaf*, therefore, is made further optimal by the fact that it clearly demarcates a morpheme boundary. This factor can be identified in a variety of other features of the reading tradition (§I.3.1.8.).

(v) Likewise, when the preposition *bet* has *shewa* and is followed by *pe*, the *bet* is plosive even when preceded by a word with a conjunctive accent ending in vowel, e.g.

וְאִכָּבְדָ֤ה בְּפַרְעֹה֙ ‘and I will get glory over Pharaoh’ (Exod. 14.4)

וּדְבָרַ֛י אֲשֶׁר־שַׂ֥מְתִּי בְּפִ֖יךָ ‘and my words which I have put in your mouth’ (Isa. 59.21)

When the *bet* has a vowel, it is fricative in these conditions, e.g.

אַל־יֵ֣רֶא בִפְלַגּ֑וֹת ‘He will not look upon the rivers’ (Job 20.17)

A *pe* is closely related to *bet* in its articulation. A preposition *bet* or *kaf* that is followed by a fricative בגדכפת consonant that is not of similar articulation is not made plosive under the conditions in question, e.g.

וַיַּנִּחֵ֥הוּ בְגַן־עֵ֖דֶן‘and he put him in the garden of Eden’ (Gen. 2.15)

הֲל֗וֹא כְגַ֤עַת בָּ֨הּ ‘surely when [the east wind] strikes it’ (Ezek. 17.10)

(vi) Seven cases do not fit into the previous categories, over which there was no disagreement by the Masoretes. Four of these are in the Song of the Sea (Exod. 15):

גָאֹ֣ה גָּאָ֔ה ‘he has triumphed gloriously’ (Exod. 15.1, 21)

מִ֣י כָּמֹ֫כָה ‘Who is like you?’ (Exod. 15.11)

יִדְּמ֣וּ כָּאָ֑בֶן ‘they are as still as a stone’ (Exod. 15.16)

וְשַׂמְתִּ֤י כַּֽדְכֹד֙ ‘and I shall make (your pinnacles) of agate’ (Isa. 54.12)

וְנִלְאֵ֥יתִי כַּֽלְכֵ֖ל ‘and I am weary of holding it in’ (Jer. 20.9)

וְחָכְמָ֥ה כְּחָכְמַת־אֱלָהִ֖ין ‘and wisdom like wisdom of the gods’ (Aramaic, Dan. 5.11)

Some of these appear to have been motivated by an effort to avoid a series of identical fricative consonants in contiguous syllables or words.[20]

Cases over which there is said to be disagreement between Ben Asher and Ben Naftali include the following. L in some cases follows Ben Asher and in others Ben Naftali:

Ben Asher (L): עַם־ז֣וּ גָּאָ֑לְתָּ ‘the people whom you have redeemed’ (Exod. 15.13); Ben Naftali: גָּאָֽלְתָּ

Ben Asher: בַּחֹ֩דֶשׁ הַשְּׁמִינִ֨י בַּחֲמִשָּׁ֥ה־עָשָׂ֖ר ‘in the eighth month on the fifteenth (day)’ (1 Kings 12.32); Ben Naftali (L): בַּחֲמִשָּׁ֥ה.

Ben Asher (L): אֲדַרְגָּזְרַיָּ֣א גְדָֽבְרַיָּ֗א דְּתָֽבְרַיָּ֛א ‘the counsellors, the treasurers, the justices’ (Aramaic, Dan. 3.2, 3); Ben Naftali: גְּדָֽבְרַיָּ֛א.

[20] According to the Hebrew Masoretic treatise published by Ginsburg (1885, 37) the *kaf* in כְּחָכְמַת (Dan. 5.11) was made a plosive since *ḥet* and fricative *kaf* were difficult to combine due to the fact that they were similar in articulation (קרובים במוצא הבטוי).

Ben Asher: סַבְּכָא פְסַנְתֵּרִין ‘trigon, harp’ (Aramaic, Dan. 3.5); Ben Naftali (L): פְּסַנְתֵּרִין.

On balance, Ben Naftali prefers clearer separation by reading *dagesh* in the majority of these case.

(vii) Ben Naftali read the preposition *kaf* as plosive after וַיְהִי with a conjunctive accent in seven cases where Ben Asher read the *kaf* as fricative according to the usual rule.[21] L follows Ben Asher in this respect:

Ben Asher (L)	Ben Naftali
וַיְהִי כִשְׁמֹעַ אֲדֹנָיו	וַיְהִי כִּשְׁמֹעַ אֲדֹנָיו
‘when his master heard’ (Gen. 39.19)	
וַיְהִי כְשָׁמְעוֹ	וַיְהִי כְּשָׁמְעוֹ
‘and when he heard’ (Gen. 39.15)	
וַיְהִי כִרְאוֹת	וַיְהִי כִּרְאוֹת
‘and when (the king) saw’ (Esther 5.2)	
וַיְהִי כִרְאוֹתוֹ	וַיְהִי כִּרְאוֹתוֹ
‘and when he saw’ (Jud. 11.35)	
וַיְהִי כְהוֹצִיאָם	וַיְהִי כְּהוֹצִיאָם
‘and when they brought out’ (Gen. 18.17)	
וַיְהִי כְמָלְכוֹ	וַיְהִי כְּמָלְכוֹ
‘when he became king’ (1 Kings 15.29)	
וַיְהִי כַאֲשֶׁר־תַּמּוּ	וַיְהִי כַּאֲשֶׁר־תַּמּוּ
‘and when they had perished’ (Deut. 2.16)	

[21] *Kitāb al-Khilaf* (ed. Lipschütz, 1965, 18-19).

I.3.1.11. Orthoepic Uses of *Dagesh*

In a number of circumstances, gemination marked by *dagesh* has been introduced into the reading for orthoepic purposes to ensure that letters are clearly articulated and not slurred over. The cases in question fall into various categories.

I.3.1.11.1. Splitting Weak Consonants by *Shewa*

When two weak consonants are in contact across a syllable boundary, the first is sometimes geminated and marked with *dagesh*. This has the effect of introducing a vowel in the form of vocalic *shewa* between the two consonants, which increases their distinctness and reduces the risk of elision. This is found in particular in syllable contact involving sonorants (למנר), gutturals and *qof*, e.g.

מִקְּרֵה־לָֽיְלָה [miq̟q̟aʀ̟eː-ˈlɔːɔjlɔː] ‘accident of the night’ (Deut. 23.11)

מַמְּרֹרִֽים [mammaʀ̟oːˈʀ̟iːim] ‘bitterness’ (Job 9.18)

וּֽנְתַקְּנֻֽהוּ [ˌwuˑnθaq̟q̟aˈnuːhuː] ‘and we shall draw him away’ (Jud. 20.32)

יִקְּהַֽת [jiq̟q̟aˈhaːaθ] ‘obedience of’ (Gen. 49.10)

הַרְּעִמָֽהּ [haʀ̟ʀ̟iʕiːˈmɔːh] ‘to irritate her’ (1 Sam. 1.6)[22]

[22] According to Melamed (1948, 1) the purpose of the *dagesh* in הַרְּעִמָֽהּ (1 Sam. 1.6) is to disinguish this human activity (‘to irritate her’) from the meaning of the verb in אֵֽל־הַכָּב֥וֹד הִרְעִ֑ים ‘the God of glory thundered’ (Psa. 29.3), which refers to an action of God. This is a possible interpre-

In some cases, this strategy is applied when only one of the consonants in contact belong to this group, and occasionally also elsewhere, e.g.

עִקְּבוֹת [ʕiq̟q̟aˈvoːoθ] 'footprints of' (Psa. 89.52)

מִקְּדָּשׁ [miq̟q̟aˈðɔːoʃ] 'sanctuary' (Exod. 15.17)

מִטְּהָרוֹ [mittˤɔhɔːˈʀ̟oː] 'his lustre' (Psa. 89.45)

מִצְּעִירָה [missˤiʕiːˈʀ̟ɔː] 'small' (Dan. 8.9)[23]

הַצְּפִינוֹ [hɑssˤɑfiːˈnoː] 'to hide him' (Exod. 2.3)

As can be seen from the list of examples above, the letter before the geminated consonant is frequently *mem*, especially when the *mem* has a *ḥireq*. Such forms may have been facilitated by the fact that similar sequences occur when the preposition מִן assimilates to a word. The same may apply to examples with initial *he* with *pataḥ*, which resemble the prefixed definite article (Ariel 2020, 142).

This orthoepic strategy achieves a similar result as the strategies of lengthening the preceding vowel to induce reading of the *shewa* as vocalic, e.g. סַלְעִי [saːliˈʕiː] 'my rock' (2 Sam. 22.2, Psa. 18.3) (§I.2.5.8.5.), and the lengthening of the preceding vowel to

tation, especially since in such pairs of homophones the *dagesh* is typically put in forms relating to a human (see §I.3.1.3.). Ariel (2020), however, has argued that the motivation is phonetic rather than semantic, and I follow his view here.

[23] For the case for interpreting the *dagesh* in the forms מִטְּהָרוֹ and מִצְּעִירָה as orthoepic see Ariel (2020).

introduce metrical epenthesis between the two consonants, e.g. יְשַׁעְיָ֫הוּ [jaˌʃaˑʕ∅ˈjɔːhuː] 'Isaiah' (Isa. 1.1) (§I.2.10.).

A variant type of orthoepic strategy is to insert a vowel after the first of the two consonants in contact and geminate the second consonant, i.e. CC > CVCC rather than CC > CCVC. This is found in:

> יִֽרַדֹּ֣ף [jiːṛaddoːof] 'let him pursue' (Psa. 7.6)

This may have been applied to avoid geminating *resh*. Parallels to such restructuring of the syllable structure of words are found in the Samaritan reading tradition, e.g.

> tēšåbbəṣ < **tašbeṣ* (Ben Ḥayyim 2000, 59 | L [BHS]: תַּשְׁבֵּ֫ץ Exod. 28.4 'checkered work')

I.3.1.11.2. *Dagesh* to Strengthen Syllable Onsets

In the standard Tiberian manuscript codices there are a few cases of the marking of the *dagesh* sign on letters other than בגדכפת on the second of two consonants in contact at the boundary of syllables for the purpose of ensuring that the consonants and syllables are kept distinct. This ensured a clear division of syllables and words. In L, for example, a *dagesh* is sometimes placed on an initial *lamed* of the second word of a phrase connected with *maqqef* when the first word ends in *nun*, e.g. וַיִּתֶּן־לּ֖וֹ 'and he gave him' (Gen. 24.36) (Yeivin 1980, 294–95). This can be regarded as a measure to separate the two words clearly and prevent the coalescence and slurring of weak sonorant consonants. The *dagesh* would mark the articulation of the *lamed* with increased muscular pressure to ensure it maintains its correct articulation.

According to *Kitāb al-Khilaf*, Ben Naftali placed a *dagesh* in the first *nun* of the name נּוּן in the combination בִּן־נּוּן 'the son of Nun' (ed. Lipschütz 1965, כד). This was a measure to prevent the coalescence of two identical weak sonorant letters across a word-boundary.[24] An alternative strategy to separate the two letters was to place a *paseq* between the words, e.g.

L: לְהַגְדִּ֣יל ׀ לְמַ֗עְלָה 'to make exceedingly great' (1 Chron. 22.5)

L: וּבַרְזֶ֥ל ׀ לָרֹ֖ב 'iron in abundance' (1 Chron. 22.3).

According to *Kitāb al-Khilaf*, Ben Naftali marked a *dagesh* in the *qof* of the verb יַעְקֹּ֔ב 'he supplants' (Jer. 9.3, L: יַעְקֹ֔ב) (ed. Lipschütz 1965, לג) and this is found in C and in a number of other Tiberian Masoretic manuscripts (Yeivin 1968, 51). This ensured a clear syllable division and also, by implication, indicated that the *ʿayin* had a silent *shewa*. This, moreover, alerted the reader to the fact that the syllable division was different from that of the more frequent form יַעֲקֹב 'Jacob'. *Qof* falls into the category of weak letters, which is demonstrated, for example, by the fact that it often loses *dagesh* when in a metrically weak syllable with *shewa* (§I.2.5.2.). The practice of the Masorete Ben Naftali to use *dagesh* in this way reflects his general tendency to introduce innovative measures to ensure a careful reading to a greater extent than Ben Asher, who was more conservative (A. Ben-David 1957b).

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[24] For the need to avoid coalescence in such contexts see the discussion in *Hidāyat al-Qāriʾ*, long version, edition in vol. 2 of this book, §II.L.1.4.10.

The phenomenon of marking *dagesh* to give prominence to syllable division has a natural phonological explanation. The optimal contact between two adjacent syllables is where the onset of the second syllable is stronger than the offset (coda) of the preceding syllable (Vennemann 1988, 40). According to this principle, strength is equated with the degree of sonority or the quality of being vowel-like. This optimality principle can influence how a sequence of phonological segments is syllabified.[25] In a sequence of two consonant segments CC, a syllable division between the two is more preferred if the second consonant is less sonorant, i.e. stronger, than the first. The sonority of a consonant can be decreased by a process of fortition. Gemination is a clear process of fortition (Bybee 2015, 45), so it follows that gemination of a consonant is a natural way to mark a clearer syllable division. This also indicates that the *dagesh* in such forms as יַעְקֹּב should indeed be interpreted as having the phonetic realization of gemination and is not purely an abstract symbol of syllable division.

The practice attributed to Ben Naftali to mark *dagesh* in a weak letter after a guttural with silent *shewa* (יַעְקֹּב) and in the second word in phrases such as and בִּן־נּוּן to mark a clear division of syllables occurs in a number of later Bible manuscripts, e.g. וַיֶּאְסֹּר 'and he harnessed' (Exod. 14.6), יַעְזֵּר 'Jazer' (Num. 32.35), לֶאֱכָל־לָּחֶם 'to eat bread' (Gen. 31:54), לָהֶם מִּיָּגוֹן 'to them from sorrow' (Esther 9.22) (Ginsburg 1897, 114–36; Luzzatto 2005, 169–

[25] Alvestad and Edzard (2009) have demonstrated how this principle can explain the distribution of the insertion of *ḥaṭef* vowels in verbs with initial *ḥet* in Tiberian Hebrew.

72). These can be interpreted as reflecting a tradition of marking syllable divisions that is descended, directly or indirectly, from the practice attributed to Ben Naftali.

There is a reference in some early Masoretic sources to the practice of marking *dagesh* in the *yod* of the word וַעְיָּרִ֖ם ‘and male donkeys’ (Gen. 32.16, L: וַעְיָרִ֖ם), which is attributed to either Ben Asher or Moshe Moḥe (Baer and Strack 1879, xxxviii–xxxix). This would be a use of *dagesh* on a weak letter after a vowelless guttural analogous to יַעְקֹּב.

I.3.1.11.3. Extended *Dagesh Forte*

There is evidence that the practice of strengthening syllable onsets for orthoepic purposes by geminating a syllable-initial consonant was more widespread than is apparent from the vocalized Tiberian manuscripts. The process in question involved the reading of the *dagesh lene* in the stop variants of the letters בגדכפת as *dagesh forte*, i.e. as geminate.

This is seen by examining in particular the Karaite transcriptions and passages in *Hidāyat al-Qāriʾ*.

In several of the extant manuscripts of the Karaite transcriptions, the scribes marked the Arabic *shadda* sign where the Tiberian reading tradition had *dagesh*. In some manuscripts, the *shadda* is written only where the *dagesh* is *dagesh forte* according to the conventional interpretation of the distribution of *dagesh forte* and *dagesh lene*. In some manuscripts, however, the *shadda* sign is written both on letters with *dagesh forte* and on בגדכפת letters with what is conventionally interpreted as being *dagesh lene*. Some examples are given below.

Manuscripts that mark *shadda* corresponding to only *dagesh forte*

BL Or 2539, fols. 56-114

Dagesh forte

هدّابار (BL Or 2539 MS A, fol. 63r, 8 | L [BHS]: הַדָּבָר Gen. 21.11 ‘the word’)

همّايم (BL Or 2539 MS A, fol. 64r, 1 | L [BHS]: הַמַּיִם Gen. 21.15 ‘the water’)

Dagesh lene

دباراي (BL Or 2539 MS A, fol. 84r, 1 | L [BHS]: דְּבָרָי־ Deut. 4.10 ‘my words’)

همزبيح (BL Or 2539 MS A, fol. 67v, 1 | L [BHS]: הַמִּזְבֵּחַ־ Gen. 22.9 ‘the altar’)

BL Or 2544 + Or 2545 + Or 2546

Dagesh forte

وايّكّثوم (BL Or 2546, fol. 3r, 7 | L [BHS]: וַיַּכְּתוּם Num. 14.45 ‘and they beat them into pieces’)

يجّايل (BL Or 2545, fol. 207v, 5 | L [BHS]: יִגָּאֵל Lev. 27.33 ‘it will be redeemed’)

همّراا (BL Or 2544 fol. 74v, 2 | L [BHS]: הַמַּרְאֶה Exod. 3.3 ‘the sight’)

Dagesh lene

باأيس (BL Or 2544 fol. 74r, 10 | L [BHS]: בָּאֵשׁ Exod. 3.2 ‘with the fire’)

فاناو (BL Or 2544 fol. 75r, 6 | L [BHS]: פָּנָיו Exod. 3.6 ‘his face’)

ميمشفحوث (BL Or 2546, fol. 132r, 11 | L [BHS]: מִמִּשְׁפַּחַת Num. 36.1 ‘from the family of’)

Manuscripts that mark *shadda* corresponding to both *dagesh forte* and *dagesh lene*

BL Or 2540

Dagesh forte

نيثحكّما (BL Or 2540, fol. 4r, 4 | L [BHS]: נִֽתְחַכְּמָה Exod. 1.10 ‘let us deal wisely’)

واتّصفناهو (BL Or 2540, fol. 5v, 4 | L [BHS]: וַתִּצְפְּנֵהוּ Exod. 2.2 ‘and she hid him’)

Dagesh lene

يربّا (BL Or 2540, fol. 4v, 1 | L [BHS]: יִרְבֶּה Exod. 1.12 'He increases')

جّاذ (BL Or 2540, fol. 3v, 4 | L [BHS]: גָּד Exod. 1.4 'Gad')

دّان (BL Or 2540, fol. 3v, 3 | L [BHS]: דָּן Exod. 1.4 'Dan')

ميهرتّان (BL Or 2540, fol. 7r, 5 | L [BHS]: מִהַרְתֶּן Exod. 2.18 'you hurried')

BL Or 2548 fols. 1-185

Dagesh forte

مدّوع (BL Or 2548 fol. 3r, 10 | L [BHS]: מַדּ֫וּעַ Isa. 5.4 'why?')

هَمَّالخ (BL Or 2548 fol. 13r, 9 | L [BHS]: הַמֶּ֫לֶךְ Isa. 37.5 'the king')

Dagesh lene

صمْدّي خارم (BL Or 2548 fol. 6r, 10 | L [BHS]: צִמְדֵּי־כֶ֫רֶם Isa. 5.10 'acres of the vineyard')

عذ دّور (BL Or 2548 fol. 10r, 5 | L [BHS]: עַד־דּ֣וֹר Isa. 13.20 'until generation')

شاْمَاْعْتّا (BL Or 2548 fol. 14r, 10 | L [BHS]: שָׁמַ֫עְתָּ Isa. 37.6 ‘you (ms) heard’)

يشَاعْياْهوُ كّو (BL Or 2548 fol. 14r, 9 | L [BHS]: יְשַֽׁעְיָ֫הוּ כֹּ֫ה Isa. 37.6 ‘Isaiah, thus’)

In Arabic orthography, the *shadda* sign represents the application of greater muscular pressure to a consonant in order to lengthen it. In medieval manuals concerning the correct reading (*tajwīd*) of the Arabic Qurʾān, descriptions are given of various degrees of lengthening expressed by *shadda*, but it was never used like *dagesh lene* to mark a non-geminated plosive consonant. The Karaite transcriptions that mark the *shadda* sign are essentially phonetic representations of the Hebrew reading with an Arabic orthography and so one can assume that when the *shadda* is marked, it was intended to represent lengthening of the consonant. What the data above reflect, therefore, are two varieties of reading. In one variety the *dagesh* is given its expected pronunciation, with *dagesh forte* strengthened but not *dagesh lene*. In the other variety, however, both *dagesh forte* and *dagesh lene* are strengthened and so are given the same phonetic realization. We may call this latter type of reading the ‘extended *dagesh forte*’ reading. The reading without this extension of *dagesh forte* will be referred to as the ‘*dagesh forte—dagesh lene* reading.’

A passage from *Hidāyat al-Qāriʾ* also reflects a type of reading that does not conform to the traditional classification of *dagesh* into *dagesh forte* expressing gemination and *dagesh lene*

expressing a non-geminated stop realization of a בגדכפת consonant.

The passage in question concerns the consonant *tav*, which is said to differ from other letters in having three grades of strength. The form of the passage from the long version of this work is as follows:[26]

> Chapter concerning letters that occur in three grades
>
> Take note that just as there are among the letters those that when they are adjacent to another letter, this latter makes them light with *rafe*, likewise among the letters are those that occur in three grades with regard to heaviness and lightness. The first grade is lightening. The second is the normal *dagesh*. The third is the major *dagesh*. This includes the *tav*.
>
> Take note that the *tav*, unlike the other letters, may occur *rafe*, as in וְתָאֵ֤י הַשַּׁ֙עַר֙ 'and rooms of the gate' (Ezek. 40.10); it may occur with *dagesh*, as in תַּ֣חַת הַנְּח֗שֶׁת 'instead of bronze' (Isa. 60.17), תּוֹרֵ֤י זָהָב֙ 'ornaments of gold' (Cant. 1.11); and it may occur with major *dagesh*. The latter includes three *tavs*: וַיְשִׂימֶ֥הָ תֵּֽל־עוֹלָם֙ 'He made it an eternal heap of ruins' (Josh. 8.28), וְֽאֶת־בָּ֝תָּ֗יו וְגַנְזַכָּ֛יו 'and its houses and its treasuries' (1 Chron. 28.11), וְגֻבְרַיָּ֤א אִלֵּךְ֙ תְּלָ֣תֵּה֔וֹן 'and these three men' (Dan. 3.23). I do not know anybody who differs (in reading) with regard to these three *tavs*. As for the form בָּתִּים, there were differences (of reading) with regard to it. Take note that the Tiberians said that they have a *resh* that is not read (in the same way) by anybody else. It is likely that the climate of their town caused this.

[26] Edition in vol. 2 of this book, §II.L.1.9.2.

> It has the same status as the *tav* in the word בָּתִּים according to the view of Ben Naftali, who gives it a grade in between two grades.

The short version of *Hidāyat al-Qāriʾ* supplies more details about the differences in the reading of בָּתִּים:[27]

> Take note that *tav* in three places is strengthened with *dagesh* to a greater degree than (other) cases of *tav* with *dagesh*. These are וַיְשִׂימֶ֫הָ תֵּל־עוֹלָ֫ם שְׁמָמָה ‘He made it an eternal heap of ruins’ (Josh. 8.28), וְאֶת־בָּ֫תָּיו וְגַנְזַכָּ֑יו ‘and its houses and its treasuries’ (1 Chron. 28.11), וְגֻבְרַיָּ֣א אִלֵּ֗ךְ תְּלָתֵּ֫הוֹן ‘and these three men’ (Dan. 3.23). Note that there is disagreement concerning every *tav* in the form בָּתִּים, except in וְאֶת־בָּ֫תָּיו וְגַנְזַכָּ֑יו (1 Chron. 28.11). Whoever wishes to pronounce it with the normal *dagesh* of *tav*, may do so and whoever wishes to pronounced it with with the heaviness of the *tav* of וְאֶת־בָּ֫תָּיו וְגַנְזַכָּ֑יו (1 Chron. 28.11), may do so, on condition that this is when there are a conjunctive accent and a disjunctive accent in the word without an intervening letter.

Since in these passages it is stated that there are only three *tav*s that all readers agree should be given a major *dagesh*, this major *dagesh* must be something different from normal *dagesh forte*. Both what is traditionally regarded as *dagesh lene* and also what is traditionally regarded as *dagesh forte* would, therefore, have to be considered to belong to the second grade, the ‘normal *dagesh*’. The examples cited for the ‘normal *dagesh*’ include only words that contain what is traditionally identified as *dagesh lene*,

[27] Edition in vol. 2 of this book, §II.S.3.0.

viz. תַּ֣חַת and תּוֹרֵ֖י. It does not follow, however, that 'normal *dagesh*' must be identified as *dagesh lene*. Rather the author makes no distinction between *dagesh lene* and *dagesh forte.* This could have been because the 'normal *dagesh*' was considered to include a range of phonetic realizations and degrees of muscular pressure that included an ungeminated stop and a geminated stop. This is the usual interpretation of the function of the *dagesh* sign. Alternatively the passage could be interpreted as meaning that there was no phonetic distinction between what we call *dagesh lene* and *dagesh forte*. Rather *tav* with *dagesh* was normally realized with a similar degree of muscular pressure and duration, whether in contexts where it is traditionally interpreted as *dagesh lene* or in contexts where it is traditionally interpreted as *dagesh forte*. This, in fact, is the more straightforward interpretation of the passage, especially since the point of the passage is the division into 'grades' based on differences in degrees of 'heaviness' (*thiqal*), i.e. muscular pressure, and one grade would not be expected to contain a range of different pressures. The third grade would, therefore, involve an exceptionally high degree of muscular pressure and, one can infer, duration, which are found only in a few isolated words. What we seem to have here, therefore, is a description of an 'extended *dagesh forte*' type of reading with the addition of three cases of extra-long *dagesh.*

According to Mishaʾel ben ʿUzziʾel in his *Kitāb al-Khilaf*, the Masorete Ben Naftali read all cases of בָּתִּים that had two accents by applying more muscular force than in cases without two

accents (Lipschütz 1965, 4; Eldar 1994, 77).[28] Ben Asher, however, is said to have disagreed with Ben Naftali and read only בָּתָּ֜יו (I Chron. 28.11) and וּבָתִּ֞ים (Deut. 6.11) with strong pressure. The second example is not mentioned in *Hidāyat al-Qāriʾ* but has the same accents (*ʾazla* and *geresh*). Ben Asher did not read any other cases of בָּתִּים with the same degree of pressure.[29] Mishaʾel ben ʿUzziʾel (Lipschütz ibid.) cites a Masoretic statement that is attributed to Ben Asher: 'because he (Ben Asher) mentioned in his Masora saying that in the Bible are four cases with intense *dagesh*.'[30] These statements in *Kitāb al-Khilaf* indicate that the pronunciation of *tav* as extra-long in some cases was a feature of the reading of Ben Asher and Ben Naftali.

At the end of the passage from the long version of the *Hidāya* it is stated that in the Tiberian reading there is a realization of *resh* that is not found in any other reading and that this 'has the same status as the *tav* in the word בָּתִּים according to the opinion of Ben Naftali,' who pronounced the *tav* of this word with 'a grade in between two grades' (*manzila bayna manzilatayn*). The author of *Hidāyat al-Qāriʾ* applies a

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[28] כל לשון בתים מא כאן מנה בלחנין כאן בן־נפתלי ידגשה אעני ישד פיה זאיד עלי גירה 'Every case of בָּתִּים with two accents was given *dagesh* by Ben Naftali, I mean he pronounced it with force more than other cases (of the word without two accents)'.

[29] ומא כאן גירהא מא כאן ישד פיה אמתֿאל הדֿא אלשד 'He did not pronounce other cases with the similar strength' (Lipschütz 1965, 4; Eldar 1994, 77).

[30] Ed. Lipschütz (1965, 4): לאנה דֿכר פי מאסרתה וקאל אן פי אלקראן ארבעה בלשון מרובה דגשין.

classification based on grades (*manāzil*) to three variant articulations of *resh*. These were non-emphatic advanced uvular [ʀ̟], emphatic alveolar [rˤ] and geminate respectively, which can, likewise, be correlated with three degrees of muscular pressure. The non-emphatic advanced uvular realization of *resh* is referred to in the *Hidāya* as the 'light' (*khafīf*) grade, the geminate *resh*, marked by a *dagesh*, is the 'major' (*kabīr*) grade, and the emphatic alveolar is 'the grade between grades' (*manzila bayna manzilatayn*) (Khan 1995, 2013c). Unlike the classification of the three variants of *tav*, the classification of three variants of *resh* is presented as two basic grades, with a third variant that is between two grades. The term *manzila bayna manzilatayn* is likely to originate in the Muʿtazilite theological tradition.[31] It is used in Arabic grammatical literature to refer to cases of intermediate grammatical status. Al-Jurjānī (d. 471/1078), for example, states that the Arabic negator *laysa* has an intermediate position (*manzila bayna manzilatayn*) between the verb *kāna* and the negative particle *mā* with regard to the extent of its inflection.[32] Mishaʾel ben ʿUzziʾel states that the distinctive feature of Ben Naftali's reading of בָּתִּ֫ים was that he regularly pronounced the *tav* in it with more force when it had two accents than when it lacked a secondary accent. The term *manzila bayna manzilatayn*,

[31] It was one of the principles of Muʿtazilite doctrine that the term 'unbeliever' could not be applied to a Muslim believer who had committed a grave sin. The latter, therefore, could be neither a believer nor an unbeliever, but in an intermediate state (*manzila bayna manzilatayn*); cf. Gimaret (2015).

[32] See Baalbakki (2008, 132).

therefore, must be referring to a degree of strength that was greater than a normal *dagesh*. In the passage on the *tav* in the *Hidāya,* the normal *dagesh* was read as a geminate so the intermediate position of Ben Naftali is presumably referring to a degree of strength that was greater than normal gemination but less than the extra-long pronunciation in the specified cases. The practice of pronouncing the *dagesh* of *tav* with a strength greater than normal gemination was, according to the *Hidāya,* unique to the Tiberian tradition.[33]

The passage cited above from the original Arabic versions of *Hidāyat al-Qāriʾ* underwent an adaptation in the Hebrew versions of the work that were produced in medieval Europe, such as *Horayat ha-Qore* (twelfth century) and *Sefer Ṭaʿame ha-Miqra* (thirteenth century) (Eldar 1994, 16–18). In *Horayat ha-Qore* the passage has the following form:[34]

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[33] The Masorah Parva to I Chron. 28.11 contains the note: ה׳ תוין דגשי׳ בחוזק ‘There are five *tav*s that have strong *dagesh*’. It is not clear in which words these *tav*s occur apart from the *tav* in בָּתָּ֫יו in the 1 Chron. 28.11 (Dotan 1967, 15).

[34] Ed. Busi (1984, 60): שער התי״ו. בג׳ מקומות נדגשת התי״ו, מכל התוי״ן הנדגשות
והם וישימה תל עולם, ובתיו וגנזכיו, וגובריא אלך תלתיהון. וכל בתים, שהן לשון מדה,
אבל, בתים כגון: ויין בתים עשרים אלף ושמן בתים עשרים אלף, דכותהון פתח ודגש.
ובתים מלאים כל טוב, הניס את עבדיו ואת מקנהו אל הבתים, שהן לשון דירה, כגון:
ואת בתיו וגנזכיו, שאע״פ שהוא לשון דירה כולהון קמצין, ואין ידגיש בחוזק. מבלעדי:
הוא מדגיש בחוזק ובקמץ, מפני שיש בו משרת וטעם, ונראה כאילו הוא שני תיבות. ויש
ובתים מליאים טוב, הואיל שהמשרת והטעם יחד שמוסיפין עליהן, להדגיש בחוזק:
בתיבה.

> Chapter on the *tav*. In three places *tav* has a (stronger) *dagesh* than all (other) *tav*s with *dagesh*, namely : וַיְשִׂימֶ֥הָ תֵּל־עוֹלָ֖ם 'He made it an eternal heap of ruins' (Josh. 8.28), וְאֶת־בָּתָּ֛יו וְגַנְזַכָּ֥יו 'and its houses and its treasuries' (1 Chron. 28.11), וְגֻבְרַיָּ֤א אִלֵּךְ֙ תְּלָתֵּ֔הוֹן 'and these three men' (Dan. 3.23), and all cases of בתים that denote measurement, such as וְיַ֨יִן בַּתִּ֜ים עֶשְׂרִ֣ים אֶ֔לֶף וְשֶׁ֕מֶן בַּתִּ֖ים עֶשְׂרִ֥ים אָֽלֶף 'and twenty thousand baths of wine, and twenty thousand baths of oil' (2 Chron. 2.9) and the like with *pataḥ* and *dagesh*. But (cases of) בתים that denote habitation, like וּבָ֨תִּ֜ים מְלֵאִ֣ים כָּל־ט֗וּב 'and houses full of all good things' (Deut. 6.11), הֵנִ֛יס אֶת־עֲבָדָ֥יו וְאֶת־מִקְנֵ֖הוּ אֶל־הַבָּתִּֽים 'he made his slaves and his cattle flee into the houses' (Exod. 9.20), all have *qameṣ* and are not given strong *dagesh* (i.e. they have *dagesh lene*), with the exception of וְאֶת־בָּתָּ֛יו וְגַנְזַכָּ֥יו (1 Chron. 28.11), which, although it denotes habitation, it has strong *dagesh* and *qameṣ*, because it contains a conjunctive accent and main accent, and it is as if it is two words. Some add to the ones (i.e. these examples) that should be given strong *dagesh* וּבָ֨תִּ֜ים מְלֵאִ֣ים כָּל־ט֗וּב (Deut. 6.11), because the conjunctive accent and main accent are together in the word.'

Here a section has been added to the original passage referring to the plural form בַּתִּים 'baths'. This version of the passage conveys the sense that there are two types of *dagesh*, viz. *dagesh forte* and *dagesh lene*. The three cases of *dagesh* in the *tav* after *qameṣ* in וַיְשִׂימֶ֥הָ תֵּל־עוֹלָ֖ם (Josh. 8.28), וְאֶת־בָּתָּ֛יו וְגַנְזַכָּ֥יו (1 Chron. 28.11) and וְגֻבְרַיָּ֤א אִלֵּךְ֙ תְּלָתֵּ֔הוֹן (Dan. 3.23), and some also include the *dagesh* after the *qameṣ* in וּבָ֨תִּ֜ים מְלֵאִ֣ים כָּל־ט֗וּב (Deut. 6.11), are equated with the *dagesh* of בַּתִּים, i.e. they are interpreted as 'normal' *dagesh forte*. In all other cases of בָּתִּים the *dagesh* is *dagesh*

lene. There is no reference here at all to an extra-long grade of *dagesh*. Evidently the author of *Horayat ha-Qore* was not familiar with the version of the Tiberian reading tradition in which the extra-long *dagesh* existed. For this reason, he misunderstood the point of the original passage that the *dagesh* in the *tav* after *qameṣ* in the specified cases was exceptional in the degree of its strength and was not like the normal *dagesh forte* of words such as בַּתִּים. The author of *Horayat ha-Qore* was also unfamiliar with the extended *dagesh forte* reading, since he alludes to a *dagesh lene* in most cases of בָּתִּים.[35]

One may infer from this that extra-long *dagesh* was a phenomenon of the extended *dagesh forte* reading and was not known in the *dagesh forte—dagesh lene* reading. It would appear that only the latter was transmitted to Europe, or at least in the circles where the European recensions of *Hidāyat al-Qāriʾ* were produced. If this is the case, then the reference to the Masoretes Ben Asher and Ben Naftali having extra-long *dagesh* in their

[35] The passage has the same adapted form also in *Sefer Ṭaʿame ha-Miqra*. Eldar (1984, 28) used this adapted version of the passage on the *tav* in his interpretation of the original Arabic version of *Hidāyat al-Qāriʾ* and this, therefore, led him to misinterpret the original. According to Eldar the *al-dagesh al-kabīr* ‘major *dagesh*’ of *tav* was not a fully geminated *tav*, but only a half-geminated one [t^t]. The fully geminated *tav* [tt] is found in the word בַּתִּים. This argument is based on the assumption that the passage is excluding consideration of *dagesh forte* used to express gemination. In the passage on the grades of *resh*, however, the ‘major’ (*kabīr*) grade of the letter is said to be geminate *resh* with *dagesh*, as in הַרְּאִיתֶם֙ (1 Sam. 10.24). This is evidence that the classification of the grades of strength of *tav* includes the full range of the realization of *tav*.

reading of *tav* in specific words would imply that their reading was of the extended *dagesh forte* type.

Another section of *Hidāyat al-Qāriʾ* that could be interpreted as evidence for the extended *dagesh forte* reading is one that concerns the reading of word-initial בגדכפת letters with *dagesh* after a preceding word with a conjunctive accent in contexts where a fricative reading may be expected.[36] Most of the constructions in this section contain word-initial בגדכפת consonants with what is normally interpreted as *dagesh lene*. The section, however, also includes word-initial בגדכפת consonants in *deḥiq* constructions. There is no doubt that the *dagesh* of *deḥiq* constructions was *dagesh forte* (§I.2.8.1.2.). It appears that *Hidāyat al-Qāriʾ* considered these to have the same type of בגדכפת stop as the other constructions, which would imply that the word-initial בגדכפת in the other constructions would have been pronounced with *dagesh forte*.

The extended *dagesh forte* reading arose by giving the *dagesh* sign its full value in all contexts. One motivation for this was an attempt to make a maximally clear distinction between fricative and plosive forms of the בגדכפת letters. Another motivation for strengthening the pronunciation of the *dagesh* in this way was to mark a clear separation between syllables. This enhanced accuracy of reading words with בגדכפת consonants was achieved without deviating from the standard Tiberian notation system.

[36] Long version, edition in vol. 2 of this book, §II.L.1.7; short version, edition in vol. 2 of this book, §II.S.2.0.

Without doubt, there was a distinction historically between geminate and non-geminate בגדכפת stops (i.e. between *dagesh forte* and *dagesh lene*). This is seen, for example, in pre-Masoretic Greek and Latin transcriptions such as the Greek transcriptions of the second column of Origen's Hexapla and the Latin transcriptions of Jerome:

> βοκρ = בֹּקֶר, ερδοφ = אֶרְדֹּף, vs. ιδαββερ = יְדַבֵּר, σαδδικιμ = צַדִּיקִים (Brønno 1943, 357, 383)
>
> iegdal = יִגְדַּל (Sperber 1937, 158), marphe = מַרְפֵּא (Sperber 1937, 192), baddim = בַּדִּים (Sperber 1937, 211), thephphol = תִּפֹּל (Sperber 1937, 159)

The evidence we have of the extended *dagesh forte* reading is datable to the tenth and early eleventh centuries in the use of the *shadda* in a certain group of the Karaite transcriptions and in *Hidāyat al-Qāri*ʾ. This can be interpreted as reflecting the fact that it was in the late Masoretic period that the extended *dagesh forte* reading began to be used by some readers. Since the orthoepic work *Hidāyat al-Qāri*ʾ seems to be assuming that the extended system is the correct Tiberian reading, it can be hypothesized that the extended system was regarded as the preferred system among the surviving teachers of the Tiberian reading at that period. Indeed, we have argued above that the sources can be interpreted as indicating that this was a feature of the reading of Ben Asher and Ben Naftali, who belonged to the last generation of Tiberian Masoretes.

As the Karaite transcriptions suggest, the extended *dagesh forte* reading appears to have existed alongside the more conservative *dagesh forte—dagesh lene* reading. Fragments of anonymous Masoretic treatises datable to the tenth or eleventh centuries reflect this variation. In one such treatise (ed. Allony and Yeivin 1985, 101), there is a reference to a distinction between 'heavy *dagesh*' (*dagesh thaqīl*) and 'light *dagesh*' (*dagesh khafīf*) that corresponds to the normally accepted distinction between *dagesh forte* and *dagesh lene*. In another treatise, on the other hand, cases that are traditionally regarded as *dagesh lene* are referred to by the Arabic term for gemination *tashdīd* (II Firkovitch Evr.-Arab II 365, fols. 6r, 21r).

The orthoepic development of the orally transmitted Tiberian reading tradition appears not to have been known outside of Palestine and in the later Middle Ages it fell into complete oblivion. This lack of knowledge of the latest stages of the Tiberian reading arose because the tradition was disseminated outside Palestine and to later generations only in the form of the written vocalization. The vocalization in its standard form did not reflect these orthoepic developments. There is, therefore, a scholarly amnesia with regard to the final form of the Tiberian reading tradition, which can only be reconstructed in sources such as the Karaite transcriptions and the original Arabic versions of the orthoepic treatise *Hidāyat al-Qāriʾ*.

This extended *dagesh forte* reading is likely to have been the stimulus for the use of *dagesh forte* on other consonants at the onset of syllables to mark clear syllable division in forms such as the verb יַעְקֹּב 'he supplants' (Jer. 9.3), which is attributed to Ben

Naftali in *Kitāb al-Khilaf* (ed. Lipschütz 1965, לג), and the extended use of *dagesh* in non-Standard Tiberian manuscripts (see §I.3.3. below).

I.3.1.12. Dagesh in the Word בָּתִּים

According to the passage on the *tav* in *Hidāyat al-Qāriʾ* that was discussed in the previous section, the *dagesh* in the word בָּתִּים was pronounced in two ways. When the word had a secondary accent, it was pronounced extra-long, with the third grade of muscular force, greater than cases of בָּתִּים without a secondary accent. Ben Naftali pronounced all cases of the word with a secondary accent in this way, whereas Ben Asher read it as extra-long only in one (or according to the *Kitāb al-Khilaf* two) specific verse(s). The *tav* of the word was pronounced as a 'normal' *dagesh* (second grade *tav*) when the word did not have a secondary accent and also, in the case of the reading of Ben Asher, in cases where it had a secondary accent outside of the one (or two) specific verse(s). As discussed, the term 'normal' *dagesh* in this passage referred to a 'normal' geminate *dagesh forte,* since *Hidāyat al-Qāriʾ* is describing an extended *dagesh forte* type of reading.

The extra-long duration of the *dagesh* is possibly the result of a prosodic epenthesis between stress prominences. When there was a secondary accent in the word, the *tav* was given an added duration to ensure a clearer separation between the stresses for the sake of rendering the reading eurhythmic to a maximal extent. The same applies to the other two words in which, according to *Hidāyat al-Qāriʾ*, the *tav* was pronounced extra-long, viz. These are וַיְשִׂימֶ֫הָ תֵּֽל־עוֹלָם֙ שְׁמָמָ֔ה 'He made it an eternal heap of

ruins' (Josh. 8.28, וְגֻבְרַיָּ֣א אִלֵּ֗ךְ תְּלָ֣תֵּה֔וֹן 'and these three men' (Dan. 3.23). In both cases the *tav* occurs in between two stress prominences that are close to each other. In וַיְשִׂימֶ֥הָ תֵּל־עוֹלָ֖ם one could assume that the word תֵּל־ had a secondary stress, although it is not marked by an accent or a *gaʿya*. The word has a short /e/ vowel, without inherent length (cf. תִּלּ֔וֹ, like לֵב, לִבּוֹ), so it would be expected to be *segol* if not lengthened by some kind of stress (see §I.2.11.).

In the group of Karaite transcriptions that reflect an extended *dagesh forte* reading a *shadda* sign is marked on the *tāʾ* representing the Hebrew *tav* in all cases, e.g.

> بَباتّي (BL Or 2550 fol. 18v, 5 | L [BHS]: בְּבָתֵּ֣י Zeph. 2.7 'in the houses of').

In the group of Karaite transcriptions that reflect a *dagesh forte—dagesh lene* reading, however, a *shadda* is not marked on the *tāʾ*, indicating that in this type of reading the word was read as a non-geminated stop, e.g.

> هباتىم (BL Or 2544, fol. 189r, 13 | L [BHS]: הַבָּתִּ֑ים Exod. 9.20 'the houses')

> من-هبّاتيم (BL Or 2544, fol. 159r, 8 | L [BHS]: מִן־הַבָּתִּ֖ים Exod. 8.9 'from the houses')

> باتي (BL Or 2544, fol. 181v, 4 | L [BHS]: בָּתֵּ֥י Exod. 8.17 'the houses')

بَاتِيهِامْ (BL Or 2549, fol. 40v, 8 | L [BHS]: בָּתֵּיהֶם֙ Jer. 6.12 ‘their houses’)

وَمِبَّاتَاخَا (BL Or 2544, fol. 158r, 13 | L [BHS]: וּמִבָּתֶּ֑יךָ Exod. 8.5 ‘and from your houses’)

Also where there is a secondary accent in the word, the transcriptions of this group do not mark a *shadda* sign, reflecting a pronunciation with an ungeminated *tav*. This applies even to 1 Chron. 28.11, which is the form in which, according to the Masoretic treatises, both Ben Asher and Ben Naftali read the *tav* as extra-long:

وَمِبَاتَاخَا (BL Or 2544, fol. 158v, 10 | L [BHS]: וּמִבָּֽתֶּ֔יךָ Exod. 8.7 ‘and from your houses’)

وُبَاتِيم (BL Or 2442, fol. 213v, 13 | L [BHS]: וּבָ֨תִּ֜ים Deut. 6.11 ‘and houses’)

بَاتَاو (BL Or 2556, fol. 122r, 7 | L [BHS]: בָּ֫תָּ֫יו 1 Chron. 28.11 ‘its houses’)

We have seen that the author of *Horayat ha-Qore* in medieval Europe states that the *tav* of the word has *dagesh lene*, except in וְאֶת־בָּ֫תָּ֫יו וְגַנְזַכָּ֜יו (1 Chron. 28.11) and וּבָ֨תִּ֜ים מְלֵאִ֣ים כָּל־ט֗וּב (Deut. 6.11).

Ḥayyūj, writing in Spain at the end of the tenth century, considered that the *tav* in all instances of בָּתִּים was pronounced

as an ungeminated stop. This is implied by the following passage from his *Kitāb al-ʾAfʿāl Dhawāt Ḥurūf al-Līn*:[37]

> ‘As for the “light” (type of בגדכפת), this is like בְּרֵאשִׁ֖ית בָּרָ֣א אֱלֹהִ֑ים ‘in the beginning God created’ (Gen. 1:1) … and like וּמָלְא֨וּ בָתֶּ֜יךָ וּבָתֵּ֣י כׇל־עֲבָדֶ֗יךָ ‘and they shall fill your houses and the houses of your servants’ (Exod. 10.6).[38]

Yequtiʾel ha-Naqdan, who was active in medieval Ashkenaz in the second half of the thirteenth century, writes in his work *ʿEn ha-Qore* that the *tav* in the word בָּתִּים should be read with *dagesh lene* following Ḥayyūj:[39]

> ‘I have found that Rabbi Yehudah Ḥayyūj, of blessed memory, said that there is a dagesh lene in the tavs of בָּֽתֶּ֫יךָ, בָּֽתִּ֫ים and the like. …. Be careful not to pronounce the dagesh strongly.’

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[37] Ed. Jastrow (1897, 12–13): فامّا الخفيف فمثل בְּרֵאשִׁית בָּרָא אלהים ... ومثل ומלאו בָתֶּיךָ וּבָתֵּי כל עבדיך.

[38] The plosive pronunciation of the *tav* after long *qameṣ* was regarded as anomalous by Ḥayyūj and he is quoted by Ibn Ezra in his *Sefer Ṣaḥot* (ed. del Valle Rodríguez 1977, 1:289) to the effect that the *qameṣ* occurs to differentiate the word in meaning from בַּתִּים ‘baths’ (measure of capacity); cf. Charlap (1999, 121–22). The source of such a statement about the differentiating function of the *qameṣ* cannot be identified in the extant corpus of Ḥayyūj’s writings. It may be based on Ibn Ezra’s misinterpreation of the passage concerning the בגדכפת consonants and בָּתִּים in *Kitāb al-ʾAfʿāl Dhawāt Ḥurūf al-Līn* (ed. Jastrow 1897, 12–13) (José Martínez Delgado, personal communication).

[39] Ed. Gumpertz (1958, 46): מצאתי שאמר ר׳ יהודה חיוג ז״ל בָּֽתֶּ֫יךָ בָּֽתִּ֫ים ודומי׳ יש בהם דגש קל בתו״יהם ... השמר לך שלא תדגיש את התי״ו בחזק.

The reading traditions of the Jewish communities in Arabic-speaking countries in modern times preserved the gemination of *dagesh forte* according to the distribution of the *dagesh forte—dagesh lene* system of reading. There is no trace of an extended *dagesh forte* type of reading. Nor is there any trace of an extra-long gemination of *tav*. The plural form בָּתִּים is regularly read with *dagesh lene*, e.g. Yemen: bavoːtʰeːxäm (בְּבָתֵּיכֶם 'in your houses' Isa. 3.14) (Morag 1963, 38; Yaʾakov 2015, 72 n.134). This applied even to cases where the word has a secondary accent.

It appears, therefore, that the extended *dagesh forte* reading, which included the reading of the *tav* of בָּתִּים as geminate and as extra-long in some cases where it had two accents, fell into oblivion in Jewish communities outside of medieval Palestine.

I.3.1.13. Loss of Gemination

Gemination has been lost in the Tiberian tradition in the following circumstances.

I.3.1.13.1. Guttural Consonants

Guttural consonants, and frequently also *resh*, lost their gemination in the pre-Masoretic period due to their weakness. In such cases the preceding vowel was lengthened by way of compensation:

הָאָדָ֫ם [hɔːʔɔːˈðɔːɔm] 'the man' < **haʾʾadam*

הָעֵ֫ץ [hɔːˈʕeːesˁ] 'the tree' < **haʿʿeṣ*

הַחֹ֫דֶשׁ [haːˈħoːðɛʃ] 'the month' < **haḥḥodeš*

הַהֽ֫וּא [haːˈhuː] ‘that’ < **hahhū*

הָֽרֶ֫מֶשׂ [hɔːˈʀ̟ɛːmɛʃ] ‘the creeping creature’ < **harrɛmɛš*

I.3.1.13.2. Weak Consonants with *Shewa*

Gemination is occasionally lost in a consonant that has vocalic *shewa*. This applies in particular to sibilants, sonorants (*yod*, *lamed*, *mem*, *nun*) and *qof*, which are weak consonants. The loss of gemination in such cases has two causes, viz. the articulatory weakness of the consonants and the prosodic weakness of the syllable of the *shewa* (§I.2.5.2.). There is some variation across the manuscripts with regard to the loss of gemination in such forms. In some cases, there is no compensatory lengthening of the preceding vowel, and the consonant that loses the gemination is syllabified as the coda of the preceding syllable, e.g.

L: הַשְׁלַבִּ֥ים ‘the frames’ (1 Kings 7.28 < הַשְּׁלַבִּ֥ים)

L: הַלְוִיִּ֑ם ‘the Levites’ (Exod. 6.25, etc. < הַלְּוִיִּם)

L: וַיְדַבֵּ֥ר ‘and he spoke (Gen. 8.15, etc. < וַיְּדַבֵּ֥ר)

In some cases, the preceding vowel is lengthened, generally indicated by a *gaʿya*, and the consonant that has lost the gemination is read with vocalic *shewa*. This applies most commonly to a *mem* after the definite article (§I.2.5.8.1.) and a sequence of two identical consonants (§I.2.5.8.3.):

L: הַֽמְדַבֵּ֥ר ‘the one speaking’ (Gen. 45.12, etc. < הַמְּדַבֵּ֥ר ‘the one speaking’)

L: בְּקַֽלְל֗וֹ ‘when he cursed’ (A: בְּקַֽלְל֗וֹ, 2 Sam. 16.7 < בְּקַלְּלוֹ)

I.3.1.13.3. Loss of Gemination when Adjacent to another Geminated Consonant

Dotan (1983) has shown that in L a *dagesh* marking gemination is sometimes omitted in a consonant with a full vowel when it is immediately followed by another geminated consonant. The omission of *dagesh* in this context is too systematic to be regarded as simply a scribal error, but rather it must be considered to reflect a phenomenon of the reading tradition. It is attested most commonly in weak consonants of the type that tend to omit *dagesh* when they are pronounced with *shewa*, i.e. sibilants, sonorants and *qof*. The majority of examples occur after the interrogative מַה־, the preposition מִן, the definite article or the *vav* consecutive. In many cases the *dagesh* is printed in BHS, although it does not appear in the manuscript L, e.g.

מַה־מַשָּׂ֣א ‘What is the burden’ (Jer. 23.33) < מַה־מַּשָּׂ֣א

מִשַׁדַּ֥י ‘from the Almighty’ (BHS מִשַּׁדַּ֥י, Isa. 13.6) < מִשַּׁדַּ֥י

הַצִיּ֣וּן ‘the monument’ (BHS הַצִּיּ֣וּן, 2 Kings 23.17) < הַצִּיּ֣וּן

וְהַמַסֵּכָ֣ה ‘and the covering’ (BHS וְהַמַּסֵּכָ֣ה, Isa. 28.20) < וְהַמַּסֵּכָ֣ה

הַשִׁבֳּלִ֣ים ‘the ears of corn’ (Gen. 41.24, BHS mistranscribes the first vowel as a *qameṣ* due to erroneously interpreting a fleck on the parchment as the lower dot of a *qameṣ*: הָשִׁבֳּלִ֣ים; cf. B הַשִּׁבֳּלִ֣ים)

וַיִלָּחֶ֥ם ‘and he fought’ (BHS וַיִּלָּחֶ֥ם, Jud. 11.20) < וַיִּלָּחֶ֥ם

עֻזִיָּ֣ה ‘Uzziah’ (2 Kings 15.30) < עֻזִּיָּ֣ה

אֻמַיָּ֣א ‘nations’ (Aramaic, Dan. 3.7)< אֻמַּיָּ֣א

This kind of omission of *dagesh* occurs in the onset of unstressed syllables and the following geminated consonant typically, though not invariably, forms the onset of a stressed syllable. The consonant that has lost the gemination is, therefore, generally prosodically weaker. The condition that the omission of the gemination occurs adjacent to other gemination could reflect a rhythmic phenomenon, whereby the clash of two strengthened, and so prosodically prominent, consonants is avoided.

I.3.1.14. Erroneous Printing of *Dagesh* in BHS

Golinets (2013), in an important study of the manuscript L, has drawn attention to a number of errors in the diplomatic edition of L that is printed in BHS and its derivative digital editions in the reading of vocalization signs. This is due to various reasons, including confusion of natural specks on the parchment for pen marks, the concealment of vocalization signs by the strokes of letters and the overwriting or erasure of vocalization signs by a later hand.

Many of the errors in reading relate to the *dagesh* sign. Several *dagesh* signs that appear in unusual places in various words in BHS and are not found in other manuscripts have been demonstrated by Golinets (2013, 250–51) to be specks on the parchment of L. These include the following cases:[40]

[40] There are a few additional places where the printed version of BHS is correct, but some of the digital versions and BHQ have an erroneously marked *dagesh*; see Golinets (2013, 250-251) for details.

	L	BHS	
Gen. 26.1	אֲבִימֶֽלֶךְ	אֲבִימֶּֽלֶךְ	‘Abimelech’
Gen. 34.28	חֲמֹרֵיהֶ֑ם	חֲמֹרֵיהֶּ֑ם	‘their asses’
Gen. 39.19	עָ֣שָׂה	עָ֣שָׂהּ	‘he has done’
Deut. 12.9	לֹא־בָאֿתֶ֑ם	לֹא־בָּאתֶ֑ם	‘you have not come’
Jud. 14.2	קְחוּ־אוֹתָ֣הּ לִ֑י	קְחוּ־אוֹתָ֣הּ לִּ֑י	‘take her for me’
Jud. 19.5	חֶרְפָּ֑תִֿי	חֶרְפָּ֑תִּי	‘insult of me’
Cant. 6.8	מְלָכּוֹת	מְּלָכּוֹת	‘queens’

I.3.2. *Rafe*

The *rafe* sign is a horizontal line written over a letter. As with several other Masoretic terms, it appears to be an Aramaic participle in origin רָפֵה. In Judaeo-Arabic Masoretic treatises it is sometimes Arabicized as an Arabic participle, e.g. the anonymous treatise preserved in the Genizah CUL T-S NS 157.52: ראפיה *rāfiyya*, pl. רואפי *rawāfī*.

The main use of the sign is to mark בגדכפת consonants as fricative. It is not, however, marked consistently in manuscripts. The marking of the sign was not standardized in the Tiberian tradition to the same extent as the marking of *dagesh* and it differs from one manuscript to another. Some of the model Tiberian manuscripts mark it more frequently than others. *Rafe* signs are, for example, more abundant in C and S than in L and A. It is marked only rarely in B. If two letters together both require *rafe*, the sign is generally only marked once over the space between them.

Rafe is not represented in most printed editions, including BHS and BHQ, which are based on L.[41]

The inconsistent marking of *rafe* on fricative בגדכפת consonants in L can be seen in the two sample verses below:

L: Gen. 30.1-2

וַתֵּ֣רֶא רָחֵ֗ל כִּ֣י לֹ֤א יָֽלְדָה֙ לְיַעֲקֹ֔ב וַתְּקַנֵּ֥א רָחֵ֖ל בַּאֲחֹתָ֑הּ וַתֹּ֤אמֶר אֶֽל־יַעֲקֹב֙ הָֽבָה־לִּ֣י בָנִ֔ים וְאִם־אַ֖יִן מֵתָ֥ה אָנֹֽכִי׃ וַיִּֽחַר־אַ֥ף יַעֲקֹ֖ב בְּרָחֵ֑ל וַיֹּ֗אמֶר הֲתַ֤חַת אֱלֹהִים֙ אָנֹ֔כִי אֲשֶׁר־מָנַ֥ע מִמֵּ֖ךְ פְּרִי־בָֽטֶן׃

When Rachel saw that she bore Jacob no children, she envied her sister; and she said to Jacob, “Give me children, or I shall die!”Jacob's anger was kindled against Rachel, and he said, “Am I in the place of God, who has withheld from you the fruit of the womb?”

In most manuscripts, the *rafe* sign is generally, but not always, marked also on non-consonantal *he* and *ʾalef*, e.g. מַלְכָּהֿ ‘queen’, בָּאֿ ‘he came.’ A few manuscripts, especially C and S, often mark a *rafe* on the *ʾalef* in יִשְׂרָאֵֿל ‘Israel’, possibly reflecting its elision in this frequently occurring word.

The *rafe* sign is used sporadically on other letters in the manuscripts.[42] This is found mainly in contexts in which *dagesh* would be expected according to normal morphological patterns and prosodic processes, e.g.

Weak letters that have lost *dagesh* when pointed with *shewa*:

A: וַיְֿבַקְשׁוּ ‘and they inquired’ (Jud. 6.29)

[41] *Rafe* signs are marked in Ginsburg’s *Massoretico-Critical Text of the Hebrew Bible* (1894).

[42] Yeivin (1980, 286-7), Blapp (2017, 17-19).

A: שִׁלְﬞחֻ֣ו ‘send’ (Psa. 74.7)

Omission of *dagesh* in word-initial position where it would normally occur according to the rules of *deḥiq* (§I.2.8.1.2.):

A: שִׂ֣יחָה לִֽי ‘a meditation for me’ (Psa. 119.99)

After an accent in words where gemination would normally occur:

A: לָ֤מָֽה ‘why’ (Job 7.20)

The *rafe* sign is sometimes marked in contexts that closely resemble contexts where *dagesh* would be expected, e.g. on a prefix of a verbal form that is preceded by *vav* with *shewa* to distinguish it clearly from a geminated prefix of a wayyiqṭol form:

A: וְיִﬞשְׁמַ֥ע ‘and will listen’ (Isa. 42.23)

A: וְיָﬞבֹ֣א ‘that he may come’ (1 Sam. 4.3)

After a prefixed preposition with *shewa* to distinguish the construction from constructions with a preposition combined with a definite article:

C: בְּמַﬞעֲלֵ֣ה ‘on he the hill of’ (1 Sam. 9.11)

On the *nun* of first person and third person feminine verbal suffixes to distinguish them from verbal suffixes with geminate *nun*:

A: פְּדֵ֭נִﬞי ‘redeem me’ (Psa. 119.134)

A: שַׂמְתַּ֣נִﬞי ‘you have made me’ (Job 7.20)

L: תְּצִלֶּ֖ינָﬞה ‘they will tingle’ (1 Sam. 3.11)

Hidāyat al-Qāriʾ uses the term *rafe* for an ungeminated consonant in such contexts, e.g.

> When a *rafe* (letter) follows it, it has *segol*, as in מֶה לידידי (L: מֶ֣ה לִֽידִידִ֞י, A: מֶ֣ה לִֽידִידִ֞י Jer. 11.15 ‘what has my beloved?’).[43]

The letters with *rafe* in the contexts just described typically belong the set of weak sonorant letters נ, מ, ל. *Rafe* is sometimes marked on these letters in the manuscripts, no doubt by a process of analogical extension, when they are ungeminated in other contexts, where there is no risk of confusion with geminated letters, e.g.

C: גְּמָלָ֑נוּ ‘he has granted us’ (Isa. 63.7)

C: חֻמְצָתֽוֹ ‘its leavening’ (Hos. 7.4)

S: יִדְּעֹנִ֑י ‘wizard’ (Lev. 20.27)

S: וְלִשְׁנִינָ֑ה ‘and into a byword’ (Deut. 28.37).[44]

In some manuscripts, *rafe* is occasionally marked on *vav* to indicate its consonantal value. This is found before וּ expressing [uː] and also in other contexts (§I.1.6.), e.g.[45]

C: וְתַשְׁוֻ֑וּ ‘and you make equal’ (Isa. 46.5)

L: וִיהִ֤י ‘and let it be’ (Psa. 90.17)

[43] Long version, edition in vol. 2 of this book, §II.L.3.2.2.: ומא תבעה רפֿי כאן בסגולה כקֿ מֶה לידידי.

[44] Yeivin (1980, 286–87).

[45] Yeivin (1980, 286).

I.3.3. *DAGESH* AND *RAFE* IN MANUSCRIPTS WITH NON-STANDARD TIBERIAN VOCALIZATION

There is a considerable degree of variation in the use of the *dagesh* sign in manuscripts with Non-Standard Tiberian vocalization, but there is a clear tendency in many manuscripts for the sign to be used more frequently than in the standard Tiberian vocalization. Concomitantly there is also a wider use of the *rafe* sign.

The distribution of *dagesh* and *rafe* in Codex Reuchlinianus, the best known biblical manuscript with this system of vocalization, has been studied by Morag (1959). The use of *dagesh* and *rafe* in numerous other manuscripts of this type written in Europe, both biblical and non-biblical, has been described by Eldar (1978, 125–43). He shows that many of the manuscripts follow a basic principle of marking of *dagesh* similar to that of Codex Reuchlinianus, although there is a considerable amount of diversity in points of detail. Yeivin (1986) has described the distribution of *dagesh* in Vatican Urbinati 2, which was also written in Europe and exhibits a somewhat different distribution from the aforementioned manuscripts. The investigation by Blapp (2017, 2018) of Genizah fragments with Non-Standard Tiberian vocalization of a predominantly eastern origin from an earlier period (tenth–thirteenth centuries) has revealed a basic distribution similar to Codex Reuchlinianus and the material surveyed by Eldar, although each fragment exhibits some variant features.

In the Non-Standard Tiberian manuscripts, the rules of the marking of *dagesh* and *rafe* on the בגדכפת letters in the Standard Tiberian system are, in principle, applied to all letters, except the

pharyngeals (ח, ע), ר and those that function as both *matres lectionis* and consonants (א, ה, ו, י). The *dagesh* sign, therefore, is marked on the majority of letters at the beginning of a word and within a word after a silent *shewa*.

Genizah manuscripts

צַ֫דִּיקִ֑ים (T-S A12.1, Blapp 2018, 138 | L [BHS]: תּוֹעֲבַ֣ת צַ֭דִּיקִים Prov. 29.27 'abomination of the righteous')

קַּרְנֵ֣י (T-S A13.35, Blapp 2018, 139 | L [BHS]: וְֽכׇל־קַרְנֵ֣י Psa. 75.11 'all the horns of')

מַחְסֶּ֑וֹר (T-S A12.1, Blapp 2018, 141 | L [BHS]: מַחְס֑וֹר Prov. 28.27 'lack')

חֶלְקַּ֣ת (T-S A12.1, Blapp 2018, 141 | L [BHS]: חֶלְקַ֣ת Ruth 4.3 'portion of')

European manuscripts

מִסְּפַּ֖ר (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: מִסְפַּ֖ר Isa. 10.19 'number')

מַמְּלָכָ֑ה (Codex Reuchlinianus, Morag 1959, 225 | L [BHS]: מַמְלָכָ֑ה Jer. 18.9 'kingdom')

כַּרְמִּֽי (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: כַּרְמִֽי Isa. 5.3 'my vineyard')

נֹּסֵ֑ס (Codex Reuchlinianus, Morag 1959, 217 | L [BHS]: נֹסֵֽס Isa. 10.18 'sick')

Another aspect of the extension of *dagesh* in the Non-Standard Tiberian system is the use in some manuscripts of *dagesh* on

word-initial בגדכפת consonants after a preceding word with a final vowel and conjunctive accent, where a fricative form of the letter would be expected in Standard Tiberian. In these manuscripts, *dagesh* is used also on other consonants in this context. Examples:

> יְֽאבְד֤וּ כָּֽל־אוֹיְבֶ֙יךָ֙ (Vatican Urbinati 2, Yeivin 1986, 495 | L [BHS]: יֹאבְד֤וּ כָֽל־אוֹיְבֶ֙יךָ֙ Jud. 5.31 ‘may all your enemies perish’)

> כִּ֣י נִּגָּ֑פוּ (Vatican Urbinati 2, Yeivin 1986, 495 | L [BHS]: כִּ֣י נִגָּ֑פוּ Jud. 20.36 ‘that they were defeated’)

According to Morag (1959, 226–28), the *dagesh* sign at the beginning of a word and after silent *shewa* in this system of vocalization did not have a phonetic realization of gemination but only had the function of indicating a syllable boundary. Eldar (1978, 125–43) likewise takes the view that this *dagesh* did not have a phonetic realization but rather was a ‘separative *dagesh*’.

Yeivin (1983, 1986) agrees with Morag and Eldar that the function of the *dagesh* in the Non-standard Tiberian manuscripts was to express the division of syllables. He argues, however, that it was not simply an abstract sign but rather had the phonetic value of a *dagesh forte*. This would explain why it is not marked on consonants that do not in principle take *dagesh forte*, in particular the pharyngeal consonants.

I should like to argue that the distribution of the *dagesh* in manuscripts with Non-Standard Tiberian vocalization reflects a type of reading that arose by an analogical extension of the extended *dagesh forte* reading (§I.3.1.11.3.). The analogical process involved extending the gemination marking strengthened

syllable onsets from בגדכפת consonants to all consonants in syllable onsets that could be geminated. Since gemination was a potential feature also of a range of other consonants, this distribution of gemination of the בגדכפת consonants in the extended *dagesh forte* reading was extended further to include these other consonants. This took place by a process of regularization, which resulted in a more consistent distribution of the orthoepic use of *dagesh* to mark clear syllable divisions, e.g.

Extended *dagesh forte* reading		Non-Standard Tiberian Tiberian reading	
תִּשְׁבֹּר	[ttʰiʃ.ˈbboːoʀ̟]	תִּשְׁבֹּר	[ttʰiʃ.ˈbboːoʀ̟]
תִּשְׁמֹר	[ttʰiʃ.ˈmoːoʀ̟]	תִּשְׁמֹּר	[ttʰiʃ.ˈmmoːoʀ̟]
נִשְׁמֹר	[niʃ.ˈmoːoʀ̟]	נִּשְׁמֹּר	[nniʃ.ˈmmoːoʀ̟]

The incipient extension of *dagesh* to strengthen the onsets of syllables is found in forms such as וַיִּתֶּן־לּ֖וֹ ‘and he gave him’ (L, Gen. 24.36) and forms attributed to Ben Naftali such as בִּן־נּוּן ‘the son of Nun’ and יַעְקֹּ֥ב ‘he supplants’ (Jer. 9.3).

The orthoepic marking of *dagesh* on the second of two identical letters across word-boundaries, such as בִּן־נּוּן, and on a letter after a vowelless guttural, such as יַעְקֹּ֥ב, is found also in some manuscripts with Palestinian pronunciation (Fassberg 1987), e.g.

[ע]ל-ל֗[בך] (T-S A43.1, Revell 1970a, 76 | L [BHS]: עַֽל־לִבֵּֽךְ Isa. 57.11 ‘on your heart’)

ה֗[ר]ח֗[ו]ק[ים] מ֗[צדקה] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 76 | L [BHS]: הָֽרְחוֹקִ֖ים מִצְּדָקָֽה Isa. 46.12 ‘who are far from righteousness’)

[נח]שּׁׂ[בו] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 77 | L [BHS]: נֶחְשָׁ֫בוּ Isa. 5.28 ‘they seemed’

הַ֯[ע]מּׂ֯[ק] (Bod. Heb. e 30 ff. 48-49, Revell 1970a, 77 | L [BHS]: הַעְמֵ֖ק Isa. 7.11 ‘let it be deep’)

The use of the *rafe* sign is likewise extended in some Palestinian manuscripts analogously to its extension in Non-Standard Tiberian manuscripts. It is found in particular on consonants following *ḥet* and *ʿayin* that do not close a syllable, thus contrasting with *dagesh* that marks syllable closure after these consonants as we have just seen, e.g.

פעמ̂ן (T-S A43.1, Revell 1970a, 77 | L [BHS]: פַּעֲמֹ֫ן Exod. 28.34 ‘bell’)

אׂ[ח]שׁ̂[ה] (T-S A43.1, Revell 1970a, 77 | L [BHS]: אֶחֱשֶׁ֔ה Isa. 62.1 ‘I will not keep silent’)

In some Non-Standard Tiberian manuscripts, *dagesh* is added to a letter after a vowel, where a *dagesh* is lacking in the standard Tiberian tradition. This is found predominantly on the weak letters ל, מ, נ, ק and the sibilants in word-medial or word-final position, e.g.

הַלִּיכּוֹתֶ֣יךָ (T-S A13.20, Blapp 2018, 144 | L [BHS]: הֲלִיכוֹתֶ֣יךָ Psa. 68.25 ‘your processions’)

יִמְּחַ֥ץ (T-S A13.20, Blapp 2018, 144 | L [BHS]: יִמְחַ֥ץ Psa. 68.22 ‘he will shatter’)

עָנִּ֣י (T-S A13.20, Blapp 2018, 144 | L [BHS]: עָנִ֣י Psa. 70.6 ‘poor’)

מְּבַקְשֶׁ֑יךָ (T-S A13.20, Blapp 2018, 144 | L [BHS]: מְ֝בַקְשֶׁ֑יךָ Psa. 70.5 ‘those who seek you’)

אָשִּׁ֑יב (T-S A13.20, Blapp 2018, 144 | L [BHS]: אָשִׁ֑יב Psa. 68.23 ‘I will bring back’)

יִגְּדַּ֣ל (T-S A13.20, Blapp 2018, 144 | L [BHS]: יִגְדַּ֣ל Psa. 70.5 ‘he is great’)

כָּ֑ל (T-S A13.20, Blapp 2018, 144 | L [BHS]: כָּל־ Psa. 69.20 ‘all of’)

בְּדָּ֑ם (T-S A13.20, Blapp 2018, 144 | L [BHS]: בְּ֭דָם Psa. 68.24 ‘in blood’)

These letters exhibit features of weakness in the standard Tiberian tradition, such as the loss of *dagesh* when they have *shewa* (§I.2.5.2.). It is likely, therefore, that the *dagesh* that is added to them in these contexts after open syllables was primarily intended as an orthoepic measure to guard against their weak articulation and to ensure that they were pronounced distinctly.

Another consonant that is sometimes marked with *dagesh* after a vowel in such manuscripts is *ṭet*, e.g.

וּתְּפַלְּטֵּ֑נִי (T-S A13.20, Blapp 2018, 144 | L [BHS]: וּֽתְפַלְּטֵ֑נִי Psa. 71.2 ‘and you rescue me’)

The manuscript T-S A13.20, where Blapp has identified many examples of this feature, also exhibits the marking of *dagesh* on word-initial consonants that do not usually take word-initial *dagesh* in Non-Standard Tiberian manuscripts, such as *ḥet*, *vav* and *yod*:

חַיֶּ֑ים (T-S A13.20, Blapp 2018, 143 | L [BHS]: מִסֵּ֣פֶר חַיִּ֑ים Psa. 69.29 ‘of the living’)

וָ֫אָ֥רֶץ (T-S A13.20, Blapp 2018, 143 | L [BHS]: שָׁמַ֣יִם וָאָ֑רֶץ Psa. 69.35 ‘and earth’)

יֵבֹּ֫שׁוּ (T-S A13.20, Blapp 2017, 163 | L [BHS]: יֵבֹ֣שׁוּ Psa. 70.3 ‘let them be put to shame’)

There are numerous Non-Standard Tiberian manuscripts with the extended use of *dagesh* in the Genizah, which are datable to the Masoretic period or shortly after, i.e. tenth–thirteenth centuries (Díez Macho 1963; Blapp 2017, 2018). Arrant (2020) has shown that many of these manuscripts were written in a monumental format with three columns similar to the model Tiberian manuscripts. This suggests that the marking of *dagesh* in such manuscripts reflected a living reading tradition in the Middle East at the time when such manuscripts were written.[46]

Manuscripts with Non-Standard Tiberian extended *dagesh* were widely distributed in medieval Ashkenaz. Yequtiʾel ha-Naqdan, who was writing in medieval Ashkenaz in the second half of the thirteenth century, is aware of the existence of such manuscripts. He and readers in his community, however, thought that the *dagesh* was a *dagesh lene* and so, understandably, the *dagesh* had no phonetic realization in consonants that did not

[46] Some medieval Arabic sources report marginal cases of *tashdīd* (i.e. gemination) of consonants at the beginning of syllables in the recitation of the Qurʾān, e.g. يَخْطِّفُ *yakhṭṭifu* ‘it takes away’ (Q 2.20) (ed. Bergsträsser, 1934, 3). This would, presumably, reflect a similar orthoepic measure to ensure clear syllable division.

belong to the בגדכפת group. This is expressed in the following passage from his *ʿEn ha-Qore* (ed. Yarqoni 1985, 105):

> ‘Now you should understand that the letters בגדכפת with *dagesh* are heard in all words (marked with them). Their being pronounced with *dagesh* or *rafe* is known in the language and fixed in the mouth, in the place of articulation, whether it be *dagesh forte* or *dagesh lene*. But as for the letters וזלטמנסצקש, the *dagesh lene* is not heard in them in most places … most people of our land do not know how to pronounce the *dagesh lene* that occurs in these letters.’[47]

Yequtiʾel then gives a number of examples of *dagesh lene* in the letters וזלטמנסצקש both after guttural letters, e.g. בַּעְלָּהּ, and after non-guttural letters, e.g. נִבְקְּעוּ (Yarqoni 1985, 107). Although the tradition of marking this *dagesh* continued in medieval Ashkenaz, Yequtiʾel’s remarks indicate that the reading of the *dagesh* as *dagesh forte* had largely fallen into oblivion. He qualifies his remarks with the phrase ‘in most places … most people of our land’, which may indicate that he was aware of some vestiges of the type of pronunciation that was originally reflected by the extended *dagesh* of the Non-Standard Tiberian vocalization. Indeed a statement by David Qimḥi, writing in southern France at roughly the same period as Yequtiʾel, could

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[47] ועתה הבן לך כי אותיות בּגּדּכּפּתּ נשמעים בכל מלה בדגש ודיגושם ורפיונם ניכר בלשון ותקוע בפה במוצא הדיבור בין שהוא דגש קל בין שהוא דגש חזק אבל ווּזּלּטּמּנּסּצּקּשּׁ הדגש הקל לא נשמע בהם ברוב מקומות ... ורוב אנשי ארצנו לא ידעו להשמיע את הדגש הקל הבא בותיות האלה.

be interpreted as indicating that there were still memories of this original pronunciation. In his *Mikhlol* he states:

> ‘Whenever mobile *shewa* is followed by one of the letters בגדכפת, the letter from the בגדכפת (letters) is soft … The same applies to the other letters with regard to their strength and lightness, for example in לָמָּה ‘why’ the reading of the *lamed* is strong and in וְלָמָה ‘and why?’ the reading of the *lamed* is light because of the mobile *shewa* in it. In שָׁא֣וֹל שָֽׁאַל־הָ֠אִישׁ ‘the man questioned us carefully’ (Gen. 43.7) the reading of the *shin* is strong; in וְשָׁ֥אַל ל֛וֹ ‘and he shall ask for him’ (Num. 27.21) the reading of the *shin* is light. In נָפְל֥וּ פָנֶֽיךָ ‘(why) has your countenance fallen?’ (Gen. 4.6) the reading of the *nun* is strong; in וְנָפְל֖וּ וְלֹא־יָק֥וּמוּ עֽוֹד ‘they will fall and not rise again’ (Amos 8.14) the reading of the *nun* is light. Likewise, the other letters (are read) in this way, except for *yod*, which is always light unless it has *dagesh*.’[48]

In this passage, Qimḥi refers to strong and weak variants of consonants. He states that this variation is found not only in the consonants בגדכפת, but also in other consonants. The distribution of the variation in the other consonants is the same as is found with the בגדכפת consonants, i.e. the weak variant occurs after a vowel. This appears, therefore, to be an allusion to the type of

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[48] Ed. Rittenberg (1862, 140a): כל שו״א נע וסמוך לה אחת מאותיות בג״ד כפ״ת האות ההיא אשר הוא מבג״ד כפ״ת תרפה ... וכן בשאר האותיות כפי חזקתם וכפי קלותם כמו לָמָּה קריאת הלמ״ד חזקה, ולָמָה קריאת הלמ״ד קלה מפני שו״א הנע אשר עליה, שָׁאֹל שאל האיש קריאת השי״ן חזקה וְשָׁאַל לו קריאת השי״ן קלה, נָפְלוּ פניך קריאת הנו״ן חזקה, וְנָפְלוּ ולא יקומו עוד קריאת הנו״ן קלה וכן שאר האותיות על זו הדרך זולתי היו״ד שהיא קלה לעולם זולתי אם תדגש.

pronunciation that is reflected by the extended *dagesh* of Non-Standard Tiberian vocalization, although Qimḥi does not refer to the marking of the *dagesh* sign on the strong variant of the consonants outside the בגדכפת group. His remark at the end of the passage that *yod* does not have strong and weak variants in the same way as the other consonants 'unless it has *dagesh*' can also be correlated to the type of pronunciation reflected by Non-Standard Tiberian vocalization. In manuscripts exhibiting this type of vocalization *yod* often lacks *dagesh* in word-initial or post-consonant position and takes *dagesh* only where this occurs in the standard Tiberian vocalization.[49] In this passage, therefore, we may have evidence that features of the extended *dagesh* type of Non-Standard Tiberian pronunciation survived in Ashkenaz and were applied to biblical manuscripts with standard Tiberian vocalization. It should be noted, however, that Qimḥi makes a distinction between *dagesh lene* (דגש קל) and *dagesh forte* (דגש חזק) in the בגדכפת consonants and does not identify the fortition of the other consonants in word-initial position with the gemination of *dagesh forte*.

As alluded to by Yequtiʾel ha-Naqdan, the type of pronunciation that made a distinction in pronunciation between consonants outside the בגדכפת group after a vowelless consonant or word-initial position was not widely followed in medieval Ashkenaz. Yequtiʾel describes a reading tradition in which there was a general tendency to weaken *dagesh forte*, especially when the letter had *shewa* (Yarqoni 1985, 113). There is evidence from

[49] Cf. Morag's (1959, 220) description of the distribution of *dagesh* in Codex Reuchlinianus.

transcriptions of Hebrew into Latin script in medieval France that letters with *dagesh forte*, according to the standard Tiberian vocalization, were not pronounced geminated (Gumpertz 1953, 5; Yarqoni 1985, 108–11). The marking of *dagesh forte* is, moreover, frequently omitted in medieval Ashkenazi prayer-books (Eldar 1978, 115–22), and is completely lost in modern Ashkenazi reading traditions (Glinert 2013, 192). This general weakening of gemination in Ashkenaz that had begun already in the Middle Ages would have eliminated the gemination that was distinctive of the extended Tiberian pronunciation tradition.

I.4. REFLECTIONS OF THE IMPERFECT LEARNING OF THE TIBERIAN PRONUNCIATION IN THE MIDDLE AGES

I.4.1. Preliminary Remarks

The Tiberian pronunciation was highly prestigious when it was a living oral tradition (§I.0.9.). For this reason, many readers strove to adopt it in their reading of the Bible and orthoepic measures were taken to ensure that it was pronounced correctly and distinctly. The fact that the Tiberian pronunciation was the ideal target of readers of the Bible is reflected by the fact that many manuscripts pointed with Babylonian and Palestinian vowel signs display a tendency to convergence with the Tiberian tradition.

Although the prestigious Tiberian pronunciation tradition was the ideal target, many readers fell short of achieving this target due to imperfect learning and interference from other reading traditions and vernacular languages.[1] This is reflected by the fact that manuscripts with Babylonian and Palestinian systems of vocalization that were adapted to the Tiberian tradition rarely exhibit complete convergence. Even those of a manuscript such as I Firkovtich Evr. I B 3 (Codex Babylonicus

[1] For the phenomenon of imperfect learning and its role in conditioning linguistic change see Thomason and Kaufman (1988, 251–55) and Thomason (2001, 66–76).

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Petropolitanus), which appears to represent the Tiberian tradition very closely, exhibits some differences from the tradition of the inner circle of the Tiberian Masoretic school (§I.2.5.8.).

The various Non-Standard Tiberian manuscripts that have come down to us from the Middle Ages exhibit some developed orthoepic features of the Tiberian tradition, such as the extended use of *dagesh,* but in many cases their vocalization reflects a reading that falls short of the Tiberian model.

The Karaite transcriptions into Arabic script exhibit readings of various degrees of closeness to the Tiberian tradition. Most are very close, whereas a few reflect a reading that falls short of the Tiberian ideal due to imperfect learning and interference. The transcriptions are particularly important for our understanding of the processes at work that resulted in such a failure to reach the ideal target. The discussion in this chapter, therefore, will be based to a large extent on the evidence from the transcriptions.

The failure to achieve the target is due to imperfect learning and the impact of the phonology of a substrate on the production of the reading. The key process involves the matching of phonetic sounds in the Tiberian target pronunciation with phonemic prototypes in the substrate rather than learning the Tiberian phonemic prototypes and matching the phonetic sounds with these. This can lead to a distribution of sounds that does not correspond to that of the Tiberian target. Such a suboptimal outcome can be classified into two types. (i) The distribution of sounds may correspond to that of the substrate. (ii) The distribution of sounds may correspond neither to that of the substrate

nor to that of Tiberian target. In the latter case, the resulting type of pronunciation can be said to be a ‘hypercorrection’.

I.4.2. Consonants

The main case study concerning the interference of a substrate in the achievement of a Tiberian target in the reading of consonants is the pronunciation of the interdental consonants.

In most of the Sefardi reading traditions of the Levant and North Africa that have continued down to modern times the letters *tav* and *dalet* are pronounced as stops in all contexts. They are not pronounced as interdentals where the Tiberian tradition had fricative *tav* [θ] or fricative *dalet* [ð],[2] e.g.

Aleppo

ˌkəvrat ˈʔeˌrøˑs (Katz 1981, 9 | L [BHS]: כִּבְרַת־אֶ֫רֶץ Gen. 49.19 ‘some distance’)

ˈgad geˈdud (Katz 1981, 8 | L [BHS]: גָּ֖ד גְּד֣וּד Gen. 49.19 ‘Gad, a troop … ’)

Jerba

weˌhəthalˈleˑx (Katz 1977, 17 | L [BHS]: וְהִתְהַלֵּ֧ךְ Exod. 21.19 ‘and he walks about’)

jaʕaˈbod (Katz 1977, 18 | L [BHS]: יַֽעֲבֹ֑ד Exod. 21.2 ‘he will work’)

[2] For this phenomenon see Garbell (1954, 232), Katz (1977, 16–18, 1981, 4–5), Akun (2010, 35–37, 46–47), Henshke (2013, 861–182).

Morocco

> tihuˈmut (Akun 2010, 46 | L [BHS]: תְּהֹמֹ֖ת Exod. 15.8 'depths')
>
> miˈyad (Akun 2010, 36 | L [BHS]: מִיַּ֣ד Exod. 14.30 'from the hand of (cstr.)')

The Sefardi reading traditions had their origin in the Palestinian reading tradition of Hebrew. This phenomenon, however, was not an original feature of the Palestinian reading tradition, but rather it appears to be the result of interference from the Arabic dialects spoken by the Jews of the regions in question, in which stops have replaced the interdental consonants.[3] In regions where the Arabic dialects of the Jews preserved the interdentals, these consonants were generally preserved also in the local Sefardi reading traditions of Hebrew.[4]

In some medieval Karaite transcriptions, there is evidence that readers sometimes pronounced *tav* and *dalet* as stops where interdental realizations would be expected. This is seen particularly clearly in the case of the transcription of *tav*, since the stop and fricative realizations are distinguished by different Arabic diacritics (i.e. ت vs. ث), whereas the occurrence of an Arabic د with-

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[3] See, for example, Nevo (1991, 3–4: Aleppo), David Cohen (1975, 19: Tunis), Marcel Cohen (1912, 21: Algiers).

[4] This is seen, for example, in the reading traditions of the Jews of Yemen (Morag 1963, 41–42) and of the Jews of Baghdad (Morag 1977, 5)

out a diacritic in a manuscript of a transcription could, in principle, be the result of the scribal omission of the diacritic from the letter *dhāl* and need not necessarily be interpreted as a *dāl*.

One manuscript of interest in this respect is BL Or 2551, fols. 31-101, which is an Arabic transcription of Psalms accompanied by an Arabic commentary. Where fricative *tav* occurs in the Tiberian tradition, this manuscript generally has the Arabic letter interdental *thā*ʾ, e.g.

مشلاحث (BL Or 2551 fol. 31r, 3 | L [BHS]: מִשְׁלַחַת Psa. 78.49 ‘sending of’)

مماوث (BL Or 2551 fol. 31v, 10 | L [BHS]: מִמָּוֶת Psa. 78.50 ‘from death’)

راشيث (BL Or 2551 fol. 32r, 6 | L [BHS]: רֵאשִׁית Psa. 78.51 ‘beginning’)

قانثا (BL Or 2551 fol. 32v, 13 | L [BHS]: קָנְתָה Psa. 78.54 ‘(it f.) acquired’)

On several occasions, however, it has Arabic *tā*ʾ where the Tiberian pronunciation has a fricative *tav*, reflecting the pronunciation of the consonant as a stop, e.g.

هتعبار (BL Or 2551 fol. 34v, 3 | L [BHS]: הִתְעַבָּר Psa. 78.62 ‘he was angry’)

اتِ (BL Or 2551 fol. 37r, 14 | L [BHS]: אֶת־ Psa. 79.1 object marker)

In some cases the vocalizer adds a *rafe* sign over the *tāʾ*:

كتُّوم (BL Or 2551 fol. 36v, 9 | L [BHS]: כְּתֹ֣ם Psa. 78.72 ‘according to the integrity’)

وبتبونوث (BL Or 2551 fol. 36v, 9 | L [BHS]: וּבִתְבוּנ֖וֹת Psa. 78.72 ‘and with the skilfulness of’)

وبتولوتاو (BL Or 2551 fol. 34v, 6 | L [BHS]: וּ֝בְתוּלֹתָ֗יו Psa. 78.63 ‘and its maidens’)

بختوب (BL Or 2551 fol. 55r, 2 | L [BHS]: בִּכְת֣וֹב Psa. 87.6 ‘when writing’)

The fact that in many places the manuscript has *thāʾ* where expected in the Tiberian tradition shows that the reading that it represents is not a type of Sefardi reading without any interdental consonants such as those discussed above. It appears to be an attempt at reading with a Tiberian pronunciation. The reader was successful in achieving the correct pronunciation of fricative *tav* in many places, but in several cases interference from a substrate resulted in this being read incorrectly as a stop. The *rafe* sign written over *tāʾ* in some cases reflects the reader’s Tiberian target, which was not achieved.

It is significant to note that in this manuscript transcriptions of Tiberian fricative *tav* with the Arabic stop *tāʾ* are much

more common in the Hebrew words that are embedded within the Arabic commentary. None of these is marked with the *rafe* sign, e.g.

> مشلحت (BL Or 2551 fol. 31v, 7 | L [BHS]: מִשְׁלַחַת commentary on Psa. 78.49 'sending of')

> ناتيب (BL Or 2551 fol. 31v, 12 | L [BHS]: נָתִיב commentary on Psa. 78.50 'a path')

> لا تاسور (BL Or 2551 fol. 31r, 13 | L [BHS]: לֹא תָסוּר Deut 17.11 in the commentary on Psa. 78.50 'you shall not decline')

The isolated Hebrew words within the commentary evidently reflect a less learned type of reading than the reading of the biblical text itself. Less effort was made to achieve the prestigious Tiberian target.

The ultimate origin of this elimination of interdentals in the Hebrew reading is likely to have been the lack of interdentals in the vernacular Arabic speech of the reader, as is the case with the modern Sefardi traditions without interdentals. There is, indeed, evidence from inscriptions and papyri that interdental consonants were lost in some Arabic dialects as early as the beginning of the eighth century C.E. (first century A.H.).[5]

[5] See Hopkins (1984, 33–36). To the material cited by Hopkins can be added the inscription no. 15 in Combe, Sauvaget and Wiet eds. (1931-

A possible way of explaining the suboptimal distribution of stops and interdentals in the manuscript is the model proposed by Blevins (2017) for phonological processes that take place in language contact situations. In the spoken vernacular of the reader, there was not an unvoiced interdental phoneme /θ/ but only a stop phoneme /t/ or, more likely, /t^h/, i.e. an aspirated unvoiced stop. This had only stops as its phonetic realization, i.e. [t^h] and most likely also deaspirated [t]. When the reader heard in the Tiberian pronunciation the interdental phonetic tokens [θ], these were perceptually matched to the stop /t^h/ prototype phoneme of the reader's vernacular. This matching brought about a 'perceptual magnet effect', to use Blevins' metaphor, whereby the interdental tokens of Tiberian were perceived as being like the stop tokens of the prototype in the native vernacular. As a result of this lack of perception, or at least difficulties of perception, of phonetic difference, the two tokens were confused. The ultimate result of such a process would be the pulling of the interdental into a change that would level its difference from the token of the prototype in the vernacular, i.e. a stop. In the attempted pronunciation reflected by the manuscript, however, the reader still had some knowledge, if imperfect, of the Tiberian distribution of interdentals and a desire to implement it, at least in the learned reading of the biblical text section. This has prevented a complete levelling of the distinction between interdentals and stops.

1991). The main evidence in these sources is the occurrence of the pointing of Arabic *tāʾ* where *thāʾ* is expected.

Another manuscript of a Karaite transcription, BL Or 2552 fols. 90-141, in most cases has an Arabic *tāʾ* where a fricative *tav* occurs in the Tiberian tradition, e.g.

كي موت ناموت (BL Or 2552 fol. 90v, 2 | L [BHS]: כִּֽי־מ֣וֹת נָמ֔וּת 2 Sam. 14.14 'because we have to die')

قوهالت (BL Or 2552 fol. 90v, 3 | L [BHS]: קֹהֶ֖לֶת Ecc. 1.1 'preacher')

يترون (BL Or 2552 fol. 92v, 2 | L [BHS]: ־יִּתְר֖וֹן Ecc. 1.3 'profit')

A Tiberian fricative *tav* is represented by Arabic *thāʾ* only in a few cases, e.g.

رايثي (BL Or 2552 fol. 106v, 3 | L [BHS]: רָאִ֔יתִי Ecc 4.15 'I saw')

ناحلاثانو (BL Or 2552 fol. 133v, 1 | L [BHS]: נַחֲלָתֵ֙נוּ֙ Lam. 5.2 'our inheritance')

يثوميم (BL Or 2552 fol. 133v, 11 | L [BHS]: יְתוֹמִ֤ים Lam. 5.3 'orphans')

This indicates that the reader was making some attempt at the prestigious Tiberian pronunciation. The process of levelling of vernacular and Tiberian phonetic tokens had, however, progressed further than in BL Or 2551, fols. 31-101. This would have

involved, presumably, a lesser degree of ability to perceive differences between the tokens and a lesser degree of knowledge of the correct distribution of tokens in the Tiberian pronunciation. A further reflection of this in the manuscript is the occurrence of an Arabic *thāʾ* where there was a stop in the correct Tiberian reading:

> ال ثرشاع (BL Or 2552 fol. 113v, 2 | L [BHS]: אַל־תִּרְשַׁ֥ע Ecc. 7.17 'do not be wicked!')

This can be regarded as a hypercorrection, whereby the reader strives to achieve the prestigious Tiberian reading by using an interdental token, but this is used incorrectly where the stop token should have occurred, resulting in a distribution of tokens that corresponds neither to that of Tiberian pronunciation nor to that of the vernacular substrate.

Another type of phenomenon that may be interpreted as the result of imperfect learning of the Tiberian tradition is attested in the following transcriptions. In some manuscripts, the *tav* in the words אַתְּ 'you (fs)' and בָּתִּים 'houses' is transcribed by a fricative *thāʾ*, e.g.

> اث (BL Or 2544, fol. 14v, 2 | L [BHS]: אַ֖תְּ Gen. 24.60 'you (fs))

> باثيهام (BL Or 2549, fol. 34v, 1 | L [BHS]: בָּתֵּיהֶ֑ם Jer. 5.25 'their houses')

Elsewhere in these manuscripts, the stop and fricative realization of *tav* are transcribed with their correct Tiberian

distribution. The *tav* in these two words in Tiberian pronunciation have the anomalous feature of being pronounced as a stop after a vowel although they are not geminated, at least in the conservative *dagesh forte—dagesh lene* stream of the Tiberian reading tradition (§I.2.5.9.3., §I.3.1.12.).[6] The fricative pronunciation that is reflected in these manuscripts may be the result of an analogical levelling that eliminated the anomalous distribution of the ungeminated stop. This would be a natural phonological process, but it reflects imperfect learning of the standard Tiberian tradition.[7]

I.4.3. VOWELS

I.4.3.1. Interchanges of Signs Reflecting a Substrate of Palestinian Pronunciation

Many biblical manuscripts with Non-Standard Tiberian vocalization exhibit interchanges of *pataḥ* and *qameṣ* vowel signs and interchanges of *segol* and *ṣere* vowel signs. Similar interchanges are found in many biblical texts with Palestinian vocalization.

[6] In the more advanced extended *dagesh forte* stream of the Tiberian tradition the *tav* would have been geminated in both words (§I.3.1.11.3.).

[7] A parallel to this phenomenon of fricativization of the *tav* by analogy is attested in the Babylonian tradition of Biblical Hebrew, in that one manuscript with Babylonian vocalization has a Babylonian *rafe* sign over the *tav* of the plural form 'houses: וׄבׄתׄיׄ (BHS וּבָתֵּ֥י Ezek. 26:12 'and the houses of' (Yeivin 1985, 868)).

Different patterns of interchanges are attested across the manuscripts.[8]

These interchanges reflect the fact that the reading tradition of the scribe had only one 'a' vowel phoneme and only one 'e' vowel phoneme, which was characteristic of the Palestinian reading tradition. This corresponded to the sound system of Jewish Palestinian Aramaic, which, in turn, is likely to have arisen by convergence with the sound system of Greek in Byzantine Palestine.

It is significant to note that non-biblical texts, generally of a liturgical nature, which reflect the Palestinian type of pronunciation, whether expressed in Tiberian or Palestinian vowel signs, sometimes have only one 'a' vowel sign and one 'e' vowel sign.[9] Such liturgical texts no doubt reflect more directly the Palestinian sound system. The biblical manuscripts that exhibit interchanges of vowels reflect the result of readers attempting to pronounce the text with the prestigious Tiberian pronunciation but failing to achieve the target. The interchanging of written signs in the manuscripts reflects the phenomenon, but we must turn to some Karaite transcriptions to have more insight

[8] For this phenomenon in Non-Standard Tiberian biblical texts see Morag (1959), Díez Macho (1963), and Blapp (2017). For biblical texts in Palestinian vocalization see Revell (1970a).

[9] For liturgical texts with Tiberian vocalization of this nature see Mishor (2002, 235), Rand and Loeffler (2015, 9) [I thank my colleague Michael Rand for these references] and for texts with Palestinian vocalization see Revell (1970a; 1970b) and Yahalom (1997).

into how the signs were pronounced and the phonological processes that lay behind these interchanges of signs.

I.4.3.2. Evidence for the Phonetic Realization of Interchanged Signs

Of particular interest in this regard is the Karaite transcription in BL Or 2555. This manuscript exhibits an interchange of *ṣere* and *segol* signs in syllables where the vowel is long. In the transcription such vowels are represented sometimes by Arabic *ʾalif* and sometimes by Arabic *yāʾ*. This can be interpreted as reflecting the fact that the scribe read each of the two vowel signs with two different qualities. These may be reconstructed as [ɛː], which was represented by *ʾalif*, and [eː], which was represented by *yāʾ*. Some examples are as follows.

Where Standard Tiberian has *segol*

(i) *Segol* sign corresponding to Tiberian *segol* is represented by *ʾalif*:

> ياذاخا [jɔːˈðɛːχɔː] (BL Or 2555 fol. 71v, 5 | L [BHS]: יָדֶ֑ךָ Ecc. 7.18 ‘your hand’)

(ii) *Ṣere* sign corresponding to Tiberian *segol* is represented by *ʾalif*:

> هابل [ˈhɛːvɛl] (BL Or 2555 fol. 26r, 12 | L [BHS]: הֶ֥בֶל Ecc. 4.8 ‘vanity’)

(iii) *Segol* sign corresponding to Tiberian *segol* is represented by *yāʾ*:

يافي [jɔːˈfeː] (BL Or 2555 fol. 10r, 5 | L [BHS]: יָפֶה Ecc. 3.11 ‘beautiful’)

(iv) *Ṣere* sign corresponding to Tiberian *segol* is represented by *yāʾ*:

ييلذ [ˈjeːlɛð] (BL Or 2555 fol. 31v, 1 | L [BHS]: יֶלֶד Ecc. 4.13 ‘child’)

Where Standard Tiberian has *ṣere*

(i) *Ṣere* sign corresponding to Tiberian *ṣere* is represented by *yāʾ*:

ييذاع [jeːˈðaːaʕ] (BL Or 2555 fol. 81r, 2 | L [BHS]: יֵדַע Ecc. 8.5 ‘he will know’)

(ii) *Segol* sign corresponding to Tiberian *ṣere* is represented by *yāʾ*:

هبهيما [habbeheːˈmɔː] (BL Or 2555 fol. 18r, 1 | L [BHS]: הַבְּהֵמָה Ecc. 3.21 ‘the beast’)

(iii) *Ṣere* sign corresponding to Tiberian *ṣere* is represented by *ʾalif*:

هامّا [ˈhɛːɛmmɔː] (BL Or 2555 fol. 14v, 2 | L [BHS]: הֵמָּה Ecc. 3.18 ‘they’)

(iv) *Segol* sign corresponding to Tiberian *ṣere* is represented by *ʾalif*:

كֶان [ˈkʰɛːɛn] (BL Or 2555 fol. 14v, 5 | L [BHS]: כֵּ֣ן Ecc. 3.19 ‘thus’)

This shows that interchanges of vowel signs can reflect a pronunciation with interchanges of vowel qualities that is independent of the interchange of the signs. This situation can be explained by the model used above (§I.4.2.). We may assume that the reader had only one long ‘e’ vowel prototype phoneme in the pronunciation tradition that he was most competent in. We can represent this as /ē/ and assume that it had the phonetic token [eː]. When the reader heard in the target Tiberian pronunciation the phonetic tokens of *ṣere* [eː] and long *segol* [ɛː], both of these were perceptually matched with the prototype /ē/. This matching brought about a ‘perceptual magnet effect’, whereby the [eː] and [ɛː] tokens of Tiberian were perceived as being like the [eː] tokens of the prototype in the source pronunciation. The reader attempted to pronounce the tokens of the Tiberian target pronunciation but had difficulty in distinguishing between them and, moreover, could not match the signs with the phonetic tokens that he pronounced.

I.4.3.3. Interchanges of Signs Reflecting a Substrate of Arabic Vernacular

Several medieval Bible manuscripts vocalized with Tiberian signs exhibit the interchange of *segol* and *pataḥ*. The vocalization of some of these manuscripts exhibits a variety of other Non-Standard Tiberian features, such as the extended use of *dagesh*. This applies, for example, to manuscripts such as the following:

לְעַ֫זְרָתִ֑י (T-S A13.20, Blapp 2018, 148 | L [BHS]: לְעֶזְרָתִי Psa. 70.2 'to my help')

שֳׁ֫עֶר (T-S A13.20, Blapp 2018, 148 | L [BHS]: שֳׁעַר Psa. 69.13 'gate')

עַשְׂרִ֫ים (T-S Misc 1.46, Arrant 2020 | L [BHS]: עֶשְׂרִ֫ים Exod. 27.10 'twenty')

רֶ֫בֶע (T-S Misc 1.46, Arrant 2020 | L [BHS]: רֶ֫בַע Exod. 29.40 'quarter')

The interchange is sporadically found, however, also in early model manuscripts that have a vocalization that is otherwise standard Tiberian. One such manuscript is II Firkovitch Evr. II B 10 (Yeivin 1980, 23 = L3), which was dedicated in 946 C.E., e.g.

אֶרְבֶּה (II Firkovitch Evr. II B 10 | L [BHS]: אַרְבֶּה Gen. 16.10 'I shall multiply')

There is evidence of this phenomenon even in L. In Deut. 28.11 BHS has the form בְהַמְתְּךָ 'your cattle' with a *pataḥ* in place of an expected *segol*, which occurs elsewhere in this form in L and also in Deut. 28.11 in other early model manuscripts (e.g. S בְהֶמְתְּךָ). Golinets (2013, 254–355) has shown that the *pataḥ* in L was written over an original *segol* by a second hand after, it seems, the ink of the *segol* had become faint. It is not clear at what period this second hand made this change, but it reflects the type of *segol—pataḥ* interchange that is discussed here.

Some Non-Standard Tiberian manuscripts exhibit a tendency to substitute *pataḥ* for *segol* specifically in the environment of gutturals, e.g.

עַרְוַ֣ת (T-S AS 5.144, Outhwaite 2020 | L [BHS]: עֶרְוַ֣ת Lev. 18.15 ‘nakedness’)

הָאַזְרָח (T-S AS 5.144, Outhwaite 2020 | L [BHS]: הָֽאֶזְרָ֔ח Lev. 18.26 ‘the native’)

As can be seen from other examples cited above, however, the interchange of *pataḥ* and *segol* is not restricted to this pattern in many manuscripts.

The Babylonian vocalization system did not have a sign that corresponded to Tiberian *segol*. The Babylonian sign *miftaḥ pumma* corresponded to both Tiberian *pataḥ* and Tiberian *segol*. In principle, therefore, it may be thought that the interchange of *segol* and *pataḥ* was due to a substrate of a Babylonian pronunciation tradition. The manuscripts described above, however, do not exhibit other features of Babylonian pronunciation. It is more likely that the interchange was brought about by the influence of the vernacular language of the vocalizers, which, at the period in question, must have been Arabic. Following the model of explanation used for other interference features, the interchange can be said to have arisen by the process of matching the *pataḥ* and *segol* phonetic tokens, i.e. [a], [aː], [ɑ], [ɑː], [ɛ] and [ɛː], with the Arabic prototype phonemes /a/ and /ā/, rather than with the distinct prototypes of *pataḥ* and *segol* in Tiberian pronunciation. In modern Arabic vernaculars the Arabic phonemes /a/ and /ā/ have a range of phonetic allophonic realizations that include [æ], [æː], [ɛ], [ɛː], [ɑ] and [ɑː] (Barkat-Defradas 2011b, 2011a). Assuming that this was the case also in the Middle Ages, then this would have facilitated the perceptual matching of the Arabic prototypes /a/ and /ā/ with the tokens of Tiberian *pataḥ* and *segol*.

As a result of this imperfect learning of Tiberian prototype phonemes and consequent difficulties of perceiving the differences between them, the phonetic qualities and their graphic representation were confused.

Some Non-Standard Tiberian Bible manuscripts that have the *pataḥ—segol* interchange exhibit also interchanges of these vowels with other vowels, resulting in three-way or even four-way interchanges. Some examples of these from the data presented in Arrant (2020) include the following:

pataḥ—segol—ṣere interchanges:

וּבִשֶּׁלְתָּ֙ (T-S AS 67.133, Arrant 2020 | L [BHS]: וּבִשַּׁלְתָּ֙ Deut. 16.7 ‘and you will cook’)

יֵרָאַ֙ה (T-S AS 67.133, Arrant 2020 | L [BHS]: יֵרָאֶ֙ה Deut. 16.16 ‘shall appear’)

בֵּבָּקָ֣ר (T-S AS 67.133, Arrant 2020 | L [BHS]: בַּבָּקָ֣ר Deut. 14.26 ‘in oxen’)

יִהְיֵ֣ה (T-S AS 67.133, Arrant 2020 | L [BHS]: יִהְיֶ֣ה Deut. 15.9 ‘will be’)

pataḥ—segol—qameṣ interchanges:

אֶתֶּ֣ם (T-S NS 18.5, Arrant 2020 | L [BHS]: אַתֶּ֣ם Num. 14.41 ‘you (pl)’)

וַיֹּ֣אמָר (T-S NS 18.5, Arrant 2020 | L [BHS]: וַיֹּ֣אמֶר Num. 14.41 ‘and he said’)

תִּנֶּ֣גְפ֔וּ (T-S NS 18.5, Arrant 2020 | L [BHS]: תִּנָּ֣גְפ֔וּ Num. 14.42 ‘you will [not] be struck down’)

pataḥ—segol—qameṣ—ṣere interchanges:

וַיֶּעֶן֩ (LG B1.56, Arrant 2020 | L [BHS]: וַיַּעַן֩ Gen. 23.10 'and he answered')

שֶׁעֶר (LG B1.56, Arrant 2020 | L [BHS]: שַׁעַר Gen. 23.10 'gate')

זֶקֵ֔ן (LG B1.56, Arrant 2020 | L [BHS]: זָקֵ֔ן Gen. 24.1 'old')

סַבֵ֫יב (LG B1.56, Arrant 2020 | L [BHS]: סָבִ֫יב Gen. 23.17 'around')

עֶבְדוֹ֙ (LG B1.56, Arrant 2020 | L [BHS]: עַבְדּוֹ֙ Gen. 24.2 'his slave')

לְעֵ֣ת (LG B1.56, Arrant 2020 | L [BHS]: לְעֵ֣ת Gen. 24.11 'at the time of')

מַרְאֵה֙ (LG B1.56, Arrant 2020 | L [BHS]: מַרְאֶה֙ Gen. 24.16 'appearance')

These three-way and four-way interchanges can also be explained as being due to the interference of an Arabic vernacular substrate. In such cases, the Arabic prototype phonemes /a/ and /ā/ are matched with the phonetic tokens of not only Tiberian *pataḥ* and *segol* but also with those of *ṣere* and *qameṣ* i.e. [eː], [ɔ] and [ɔː]. Arabic /a/ and /ā/ can be realized with the high allophones [e], [eː] by the process of vowel raising (known as *ʾimāla*) in various modern Arabic dialects and this can be reconstructed for earlier periods (de Jong 2011). This is reflected by some medieval Judaeo-Arabic texts with Tiberian vocalization signs, which represent such raised /a/ and /ā/ vowels by *ṣere* (Khan 2010, 204), e.g.

עֲלֵי עִבֵאדַךְ [ʕaleː ʕibeːdak] = Classical Arabic *ʿalā ʿibādak* 'on your servants' (T-S Ar.8.3, fol. 16v)

וְלֵם [walem] = Classical Arabic *wa-lam* 'and not' (T-S Ar.8.3, fol. 22v)

In these medieval vocalized Judaeo-Arabic manuscripts the Tiberian *qameṣ* sign is generally restricted to the representation of the /a/ vowel in the diphthong /aw/, reflecting, it seems, the partial phonetic assimilation of the vowel to /w/, which resulted in a back open-mid quality close to that of Tiberian *qameṣ*, i.e. [ɔw] (Khan 2010, 210), e.g.

נָוְבַה [nɔwba] = Classical Arabic *nawba* 'accident' (T-S Ar.8.3 fol. 17r)

This suggests that the range of phonetic allophones of Arabic /a/ included also [ɔ].

The existence of a range of qualities in the phonetic allophones of Arabic /a/ and /ā/ that corresponded to those of the Tiberian vowels *pataḥ, segol, ṣere* and *qameṣ* would have facilitated the matching of the Arabic prototypes with these four phonetic qualities. One may say that the three-way and four-way interchanges reflect a lesser ability to perceive the distinct qualities of the Tiberian vowels than the two-way *pataḥ—segol* interchange and so a lesser competence in the Tiberian pronunciation.[10]

[10] Such a breakdown in the perception of differences in vowel qualities is reflected also in the rhymes of some medieval Hebrew poetry, in which, for example, a syllable with *qameṣ* can rhyme with a syllable with *ṣere* (Rand 2020).

I.4.3.4. Hypercorrect Lengthening of Vowels

In §I.2.8.1.2. it was shown how the duration of long *qameṣ* and *segol* in word-final position was compressed in *deḥiq* constructions such as

L: וְאָעִ֣ידָה בָּ֔ם ‘I shall cause to witness against them’ (Deut. 31.28)

L: מִֽי־אֵ֣לֶּה לָּ֑ךְ ‘who are these to you?’ (Gen. 33.5)

In the Tiberian tradition, however, an effort was made to sustain the duration of these vowels in *deḥiq* to ensure that they were not completely reduced to short vowels, as happened in other reading traditions.

Due to imperfect learning of the Tiberian tradition, this orthoepic measure of sustaining the duration of the word-final vowels *qameṣ* and *segol* in *deḥiq* was sometimes extended hypercorrectly to historically short *qameṣ* and *segol*. This is reflected by the Karaite transcription BL Or 2539 MS B (=ff. 115-132), which represents historically short *qameṣ* and *segol* in unstressed closed syllables with *mater lectionis* *ʾalif*. The fact that other historically short vowel qualities in these conditions are not represented by *matres lectionis* suggests that this phenomenon is related to the orthoepic lengthening of *qameṣ* and *segol* in *deḥiq*, e.g.

قاذشي (BL Or 2539 MS B, fol. 125r, 15 | L [BHS]: קָדְשֵׁ֣י Num. 18.8 ‘the holy gifts of’)

لماشحا (BL Or 2539 MS B, fol. 125r, 16 | L [BHS]: לְמָשְׁחָה Num. 18.8 'a priestly portion')

لحاق (BL Or 2539 MS B, fol. 125r, 16 | L [BHS]: לְחָק־ Num. 18.8 'as a due')

عاغَلوت (BL Or 2539 MS B, fol. 115v, 6 | L [BHS]: עֶגְלֹת Num. 7.3 'covered wagons')

This manuscript reflects the hypercorrect lengthening also of *ḥaṭef qameṣ*, e.g.

اهاليهام (BL Or 2539 MS B, fol. 122v, 13 | L [BHS]: אָהֳלֵיהֶם Num. 16.27 'their tents')

I.4.4. The Reading of the Tiberian Vocalization in the Later Middle Ages

The various phenomena described above arose when the Tiberian pronunciation was still a living tradition. It was familiar to the scribes of the manuscripts, even if imperfectly, and it was regarded as a prestigious target. In the later Middle Ages, after the Tiberian pronunciation had fallen into oblivion, the prestige and authority of the oral Tiberian reading shifted to the written sign system (§I.0.12.). The Tiberian vocalization of manuscripts was then largely disconnected from the pronunciation of readers. Since there was no longer any attempt at achieving a pronunciation that differed from the local traditions, the Hebrew Bibles came to be read with these local traditions.

I.5. SUMMARY OF THE TIBERIAN PRONUNCIATION AND SAMPLE TRANSCRIPTIONS OF BIBLICAL PASSAGES

I.5.1. Summary of the Phonetics and Phonology of the Consonants

Letter	Name	Phonetic realization	Phoneme	References
א	*ʾalef*	[ʔ]	/ʔ/	§I.1.1.
בּ	*bet (dagesh)*	[b], [bb]	/b/	§I.1.2., §I.1.25., §I.3.1.11.3.
ב	*bet (rafe)*	[v]	/v/	§I.1.2., §I.1.25.
גּ	*gimel (dagesh)*	[g], [gg]	/g/	§I.1.3., §I.1.25., §I.3.1.11.3.
ג	*gimel (rafe)*	[ʁ]	/ʁ/	§I.1.3., §I.1.25.
דּ	*dalet (dagesh)*	[d], [dd]	/d/	§I.1.4., §I.1.25., §I.3.1.11.3.
ד	*dalet (rafe)*	[ð]	/ð/	§I.1.4., §I.1.25.
ה	*he*	[h]	/h/	§I.1.5.
ו	*vav*	[v], [w]	/v/	§I.1.6.
ז	*zayin*	[z]	/z/	§I.1.7.
ח	*ḥet*	[ħ]	/ħ/	§I.1.8.
ט	*ṭet*	[tˤ]	/tˤ/	§I.1.9.

 https://doi.org/10.11647/OBP.0163.05

י	*yod*	[j], [ɟ]	/j/	§I.1.10. The stop allophone [ɟ] occurs only when the consonant is geminated.
כּ, ךּ	*kaf (dagesh)*	[kʰ], [kkʰ]	/kʰ/	§I.1.11., §I.1.25., §I.3.1.11.3.
כ, ך	*kaf (rafe)*	[χ]	/χ/	§I.1.11., §I.1.25.
ל	*lamed*	[l]	/l/	§I.1.12.
מ, ם	*mem*	[m]	/m/	§I.1.13.
נ, ן	*nun*	[n]	/n/	§I.1.14.
ס	*samekh*	[s]	/s/	§I.1.15. This was equivalent in the oral reading tradition to *sin* (§I.1.21.). The distinction in orthography is an archaism (§I.0.8.).
ע	*ʿayin*	[ʕ]	/ʕ/	§I.1.16.
פּ	*pe (dagesh)*	[pʰ], [ppʰ]	/pʰ/	§I.1.17., §I.1.25., §I.3.1.11.3.
פּ	*pe (dagesh)*	[pˤ], [ppˤ]	/pˤ/	This is attested only in אַפַּדְנ֖וֹ ‘his palace’ (Dan. 11.45), where its occurrence is not conditioned by the

				phonetic environment, so it should be identified as a phoneme (§I.1.17.).
פ	*pe (rafe)*	[f]	/f/	§I.1.17., §I.1.25.
צ	*ṣade*	[$s^{ʕ}$], [$z^{ʕ}$]	/$s^{ʕ}$/	§I.1.18. For the voiced variant see §I.1.7.
ק	*qof*	[q̟]	/q̟/	§I.1.19.
ר	*resh*	[ʀ̟], [$r^{ʕ}$]	/r/	§I.1.20. The two variant realizations are conditioned by the phonetic environment and so should be identified as allophones.
שׂ	*sin*	[s]	/s/	§I.1.21. This was equivalent in the oral reading tradition to *samekh* (§I.1.15.). The distinction in orthography is an archaism (§I.0.8.).
שׁ	*shin*	[ʃ]	/ʃ/	§I.1.22.
תּ	*tav (dagesh)*	[t^h], [tt^h]	/t^h/	§I.1.23., §I.1.25., §I.3.1.11.3.
ת	*tav (rafe)*	[θ]	/θ/	§I.1.23., §I.1.25.

I.5.2. Summary of the Phonetics and Phonology of the Full Vowel Signs

Sign (placed on א)	Name	Phonetic realization	Phoneme	References
אַ	*pataḥ*	[a], [ɑ], [aː], [ɑː] Long in stressed syllables or open unstressed syllables.	/a/	§I.2.1., §I.2.2., §I.2.3.
אָ	*qameṣ*	[ɔ], [ɔː] Long in stressed syllables or open unstressed syllables.	(i) /o/ (when realized as short [ɔ]) /ɔ̄/ (when realized as long [ɔː])	§I.2.1., §I.2.2., §I.2.3.
אֶ	*segol*	[ɛ], [ɛː] Long in stressed syllables or open unstressed syllables.	/ɛ/ /e/ (in the final syllable of certain nominal and verbal forms)	§I.2.1., §I.2.2., §I.2.3.
אֵ	*ṣere*	[eː]	/e/, /ē/	§I.2.1., §I.2.2., §I.2.3.

אִ	*ḥireq*	[i], [iː] Long in stressed syllables or open unstressed syllables.	/i/, /ī/	§I.2.1., §I.2.2., §I.2.3.
אֹ	*ḥolem*	[oː]	/o/ (in final syllable of certain nominal and verbal forms) /ō/	§I.2.1., §I.2.2., §I.2.3.
אוּ, אֻ	*shureq*, *qibbuṣ*	[u], [uː] Long in stressed syllables or open unstressed syllables.	/u/, /ū/	§I.2.1., §I.2.2., §I.2.3.

I.5.3. Summary of the Phonetics and Phonology of *Shewa* and the *Ḥaṭef* Signs

Sign (placed on א)	Name	Phonetic realization	Phoneme	References
אְ	*shewa*	Silent *shewa*: [∅]	/∅/[1]	§I.2.5, §I.2.6.

[1] Epenthetic vowel, without phonological representation.

		Vocalic *shewa*: [a], [ɔ], [ɛ], [e], [i], [o], [u]. The default realization of vocalic *shewa* is a short [a]. The other vowel qualities are conditioned by some specific environments, viz.: (i) Before a guttural consonant (אהחע) a vocalic *shewa* is pronounced as a short vowel with the quality of the vowel after the guttural. (ii) Before *yod*, a vocalic *shewa* is pronounced as a short [i].		
אֲ	*ḥaṭef pataḥ*	[a]	/∅/[2]	§I.2.5.
אֱ	*ḥaṭef segol*	[ɛ]	/∅/[3]	§I.2.5., §I.2.7.
אֳ	*ḥaṭef qameṣ*	[ɔ]	/∅/[4] /o/[5]	§I.2.5., §I.2.7.

[2] Epenthetic vowel, without phonological representation.

[3] Epenthetic vowel, without phonological representation.

[4] When an epenthetic vowel.

[5] When a lexical vowel.

I.5.4. Sample Transcriptions of Biblical Passages

Each verse has two versions of transcription, which represent two different sub-traditions of the standard Tiberian reading. The first represents the *dagesh forte—dagesh lene* reading, whereas the second represents the extended *dagesh forte* reading (§I.3.1.11.3.). If a verse would have been pronounced the same in both streams of tradition, only one reading is given.

Links are given to audio files of oral performances by Alex Foreman of the Tiberian pronunciation reconstructed for the passages.

I.5.4.1. Genesis 1.1-13

Oral Performances

	Dagesh forte—dagesh lene reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.06)	
	Dagesh forte—dagesh lene reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.07)	
	Extended *dagesh forte* reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.08)	
	Extended *dagesh forte* reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.09)	

1 בְּרֵאשִׁ֖ית בָּרָ֣א אֱלֹהִ֑ים אֵ֥ת הַשָּׁמַ֖יִם וְאֵ֥ת הָאָֽרֶץ׃

[baʀ̟eːˈʃiːiθ[6] bɔːˈʀ̟ɔː ʔɛloːˈhiːim ˈʔeːeθ haʃʃɔːˈmaːjim[7] veˈʔeːeθ[8] hɔːˈʔɔːʀ̟ɛsˤ]

[bbaʀ̟eːˈʃiːiθ bbɔːˈʀ̟ɔː ʔɛloːˈhiːim ˈʔeːeθ haʃʃɔːˈmaːjim veˈʔeːeθ hɔːˈʔɔːʀ̟ɛsˤ]

2 וְהָאָ֗רֶץ הָיְתָ֥ה תֹ֙הוּ֙ וָבֹ֔הוּ וְחֹ֖שֶׁךְ עַל־פְּנֵ֣י תְה֑וֹם וְר֣וּחַ אֱלֹהִ֔ים מְרַחֶ֖פֶת עַל־פְּנֵ֥י הַמָּֽיִם׃

[vɔhɔːˈʔɔːʀ̟ɛsˤ[9] hɔːɔjˈθɔː[10] ˈθoːhuː vɔːˈvoːhuː voˈħoːʃɛχ[11] ʕal-pʰaˈneː θoˈhoːom[12] vaˈʀ̟uːwaħ[13] ʔɛloːˈhiːim maʀ̟aːˈħɛːfɛθ[14] ʕal-pʰaˈneː hamˈmɔːjim]

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[6] Default realization of vocalic *shewa*: §I.2.5.1. Insertion of an epenthetic vowel in a closed syllable with a long vowel: §I.2.4.

[7] All stressed vowels are lengthened: §I.2.2.1.

[8] Default pronunciation of *vav* is [v]: §I.1.6. Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

[9] Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

[10] Insertion of epenthetic in closed syllable with a long vowel: §I.2.4.

[11] Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

[12] Assimilation of a vocalic *shewa* to the quality of the vowel after a following guttural: §I.2.5.1.

[13] Glide [w] before furtive *pataḥ*: §I.1.6.

[14] Stressed vowels and vowels in open unstressed syllables are lengthened: §I.2.2.1.

[vɔhɔːˈʔɔːʀ̟ɛsˤ hɔːɔjˈθɔː ˈθoːhuː vɔːˈvoːhuː voˈħoːʃɛχ ʕal-ppʰaˈneː θoˈhoːom vaˈʀ̟uːwaħ ʔɛloːˈhiːim maʀ̟aːˈħɛːfɛθ ʕal-ppʰaˈneː hamˈmɔːjim]

3 וַיֹּ֥אמֶר אֱלֹהִ֖ים יְהִ֣י א֑וֹר וַֽיְהִי־אֽוֹר׃

[vaɟˈɟoːmɛʀ̟[15] ʔɛloːˈhiːim jiˈhiː ˈʔoːoʀ̟ ˌvaˑjhiː-ˈʔoːoʀ̟[16]]

4 וַיַּ֧רְא אֱלֹהִ֛ים אֶת־הָא֖וֹר כִּי־ט֑וֹב וַיַּבְדֵּ֣ל אֱלֹהִ֔ים בֵּ֥ין הָא֖וֹר וּבֵ֥ין הַחֹֽשֶׁךְ׃

[vaɟˈɟaːaʀ̟ ʔɛloːˈhiːim ʔɛθ-hɔːˈʔoːoʀ̟ kʰiː-ˈtˤoːov vaɟɟavˈdeːel ʔɛloːˈhiːim beːen hɔːˈʔoːoʀ̟ wuˈveːen[17] haːˈħoːʃɛχ]

[vaɟˈɟaːaʀ̟ ʔɛloːˈhiːim ʔɛθ-hɔːˈʔoːoʀ̟ kkʰiː-ˈtˤoːov vaɟɟavˈddeːel ʔɛloːˈhiːim bbeːen hɔːˈʔoːoʀ̟ wuˈveːen haːˈħoːʃɛχ]

5 וַיִּקְרָ֨א אֱלֹהִ֤ים ׀ לָאוֹר֙ י֔וֹם וְלַחֹ֖שֶׁךְ קָ֣רָא לָ֑יְלָה וַֽיְהִי־עֶ֥רֶב וַֽיְהִי־בֹ֖קֶר י֥וֹם אֶחָֽד׃

[vaɟɟiq̟ˈʀ̟ɔː ʔɛloːˈhiːim lɔːˈʔoːoʀ̟ ˈjoːom valaːˈħoːʃɛχ ˈq̟ɔːʀ̟ɔː ˈlɔːɔjlɔː ˌvaˑjhiː-ˈʕɛːʀ̟ɛv ˌvaˑjhiː-ˈvoːq̟ɛʀ̟ ˈjoːom ʔɛːˈħɔːɔð]

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[15] A geminated *yod* is pronounced as a voiced palatal stop [ɟ]: §I.1.10.

[16] In [ˌvaˑjhiː] there is orthoepic lengthening of the vowel before two weak consonants in contact: §I.2.10.

[17] Word-initial וּ is pronounced [wu]: §I.1.6.

6 וַיֹּ֣אמֶר אֱלֹהִ֔ים יְהִ֥י רָקִ֖יעַ בְּת֣וֹךְ הַמָּ֑יִם וִיהִ֣י מַבְדִּ֔יל בֵּ֥ין מַ֖יִם
לָמָֽיִם׃

[vaɟˈɟoːmɛʀ̣ ʔɛloːˈhiːim jiˈhiː ʀ̣ɔːˈq̟iːjaʕ baˈθoːoχ hamˈmɔːjim viːˈhiː mavˈdiːil ˈbeːen ˈmaːjim lɔːˈmɔːjim]

[vaɟˈɟoːmɛʀ̣ ʔɛloːˈhiːim jiˈhiː ʀ̣ɔːˈq̟iːjaʕ bbaˈθoːoχ hamˈmɔːjim viːˈhiː mavˈddiːil ˈbbeːen ˈmaːjim lɔːˈmɔːjim]

7 וַיַּ֣עַשׂ אֱלֹהִים֮ אֶת־הָֽרָקִיעַ֒ וַיַּבְדֵּ֗ל בֵּ֤ין הַמַּ֙יִם֙ אֲשֶׁר֙ מִתַּ֣חַת
לָרָקִ֔יעַ וּבֵ֣ין הַמַּ֔יִם אֲשֶׁ֖ר מֵעַ֣ל לָרָקִ֑יעַ וַֽיְהִי־כֵֽן׃

[vaɟˈɟaːʕas ʔɛloːˈhiːim ʔɛθ-hɔːʀ̣ɔːˈq̟iːjaʕ vaɟɟavˈdeːel beːen hamˈmaːjim ʔaˈʃɛːɛʀ̣ mitˈtʰaːħaθ lɔːʀ̣ɔːˈq̟iːjaʕ wuˈveːen hamˈmaːjim ʔaˈʃɛːɛʀ̣ meːˈʕaːal lɔːʀ̣ɔːˈq̟iːjaʕ ˌvaˑjhiː-ˈχeːen]

[vaɟˈɟaːʕas ʔɛloːˈhiːim ʔɛθ-hɔːʀ̣ɔːˈq̟iːjaʕ vaɟɟavˈddeːel bbeːen hamˈmaːjim ʔaˈʃɛːɛʀ̣ mitˈtʰaːħaθ lɔːʀ̣ɔːˈq̟iːjaʕ wuˈveːen hamˈmaːjim ʔaˈʃɛːɛʀ̣ meːˈʕaːal lɔːʀ̣ɔːˈq̟iːjaʕ ˌvaˑjhiː-ˈχeːen]

8 וַיִּקְרָ֧א אֱלֹהִ֛ים לָֽרָקִ֖יעַ שָׁמָ֑יִם וַֽיְהִי־עֶ֥רֶב וַֽיְהִי־בֹ֖קֶר י֥וֹם
שֵׁנִֽי׃

[vaɟɟiq̟ˈʀ̣ɔː ʔɛloːˈhiːim ˌlɔːʀ̣ɔːˈq̟iːjaʕ ʃɔːˈmɔːjim ˌvaˑjhiː-ˈʕɛːʀ̣ɛv ˌvaˑjhiː-ˈvoːq̟ɛʀ̣ ˈjoːom ʃeːˈniː]

9 וַיֹּ֣אמֶר אֱלֹהִ֗ים יִקָּו֨וּ הַמַּ֜יִם מִתַּ֤חַת הַשָּׁמַ֙יִם֙ אֶל־מָק֣וֹם אֶחָ֔ד
וְתֵרָאֶ֖ה הַיַּבָּשָׁ֑ה וַֽיְהִי־כֵֽן׃

[vaɟˈɟoːmɛʀ̟ ʔɛloːˈhiːim jiq̟q̟ɔːˈvuː hamˈmaːjim mitˈtʰaːħaθ haʃʃɔːˈmaːjim ʔɛl-mɔːˈq̟oːom ʔɛːˈħɔːɔð vaθeːʀ̟ɔːˈʔɛː haɟɟab-bɔːˈʃɔː ˌvaˑjhiː-ˈχeːen]

10 וַיִּקְרָ֨א אֱלֹהִ֤ים ׀ לַיַּבָּשָׁה֙ אֶ֔רֶץ וּלְמִקְוֵ֥ה הַמַּ֖יִם קָרָ֣א יַמִּ֑ים
וַיַּ֥רְא אֱלֹהִ֖ים כִּי־טֽוֹב׃

[vaɟɟiq̟ˈʀ̟ɔː ʔɛloːˈhiːim laɟɟabbɔːˈʃɔː ˈʔɛːʀ̟ɛsˤ wulmiq̟ˈveː hamˈmaːjim q̟ɔːˈʀ̟ɔː jamˈmiːim vaɟˈɟaːaʀ̟ ʔɛloːˈhiːim kʰiː-ˈtˤoːov]

[vaɟɟiq̟ˈʀ̟ɔː ʔɛloːˈhiːim laɟɟabbɔːˈʃɔː ˈʔɛːʀ̟ɛsˤ wulmiq̟ˈveː hamˈmaːjim q̟ɔːˈʀ̟ɔː jamˈmiːim vaɟˈɟaːaʀ̟ ʔɛloːˈhiːim kkʰiː-ˈtˤoːov]

11 וַיֹּ֣אמֶר אֱלֹהִ֗ים תַּֽדְשֵׁ֤א הָאָ֨רֶץ֙ דֶּ֔שֶׁא עֵ֚שֶׂב מַזְרִ֣יעַ זֶ֔רַע עֵ֣ץ
פְּרִ֞י עֹ֤שֶׂה פְּרִי֙ לְמִינ֔וֹ אֲשֶׁ֥ר זַרְעוֹ־ב֖וֹ עַל־הָאָ֑רֶץ וַֽיְהִי־כֵֽן׃

[vaɟˈɟoːmɛʀ̥ ʔɛloːˈhiːim ˌtʰa·ðˈʃeː[18] hɔːˈʔɔːʀ̥ɛsˤ ˈdɛːʃɛː ˈʕeːsɛv mɑzˈrˤiːjaʕ[19] ˈzɛːʀ̥aʕ ˈʕeːesˤ pʰaˈʀ̥iː ˈʕoːsɛ· ppʰaˈʀ̥iː[20] lamiːˈnoː ʔaˈʃɛːɛʀ̥ zɑrˤʕoː[21]-ˈvoː ʕal-hɔːˈʔɔːʀ̥ɛsˤ ˌva·jhiː-ˈχeːen]

[vaɟˈɟoːmɛʀ̥ ʔɛloːˈhiːim ˌttʰa·ðˈʃeː hɔːˈʔɔːʀ̥ɛsˤ ˈddɛːʃɛː ˈʕeːsɛv mɑzˈrˤiːjaʕ ˈzɛːʀ̥aʕ ˈʕeːesˤ ppʰaˈʀ̥iː ˈʕoːsɛ· ppʰaˈʀ̥iː lamiːˈnoː ʔaˈʃɛːɛʀ̥ zɑrˤʕoː-ˈvoː ʕal-hɔːˈʔɔːʀ̥ɛsˤ ˌva·jhiː-ˈχeːen]

12 וַתּוֹצֵ֨א הָאָ֜רֶץ דֶּ֠שֶׁא עֵ֣שֶׂב מַזְרִ֤יעַ זֶ֙רַע֙ לְמִינֵ֔הוּ וְעֵ֧ץ עֹֽשֶׂה־
פְּרִ֛י אֲשֶׁ֥ר זַרְעוֹ־ב֖וֹ לְמִינֵ֑הוּ וַיַּ֥רְא אֱלֹהִ֖ים כִּי־טֽוֹב׃

[vattʰoːˈsˤeː hɔːˈʔɔːʀ̥ɛsˤ ˈdɛːʃɛː ˈʕeːsɛv mɑzˈrˤiːjaʕ ˈzɛːʀ̥aʕ lamiːˈneːhuː veˈʕeːesˤ ˈʕoːsɛ· ppʰaˈʀ̥iː ʔaˈʃɛːɛʀ̥ zɑrˤʕoː-ˈvoː lamiːˈneːhuː vaɟˈɟaːaʀ̥ ʔɛloːˈhiːim kʰiː-ˈtˤoːov]

[vattʰoːˈsˤeː hɔːˈʔɔːʀ̥ɛsˤ ˈddɛːʃɛː ˈʕeːsɛv mɑzˈrˤiːjaʕ ˈzɛːʀ̥aʕ lamiːˈneːhuː veˈʕeːesˤ ˈʕoːsɛ· ppʰaˈʀ̥iː ʔaˈʃɛːɛʀ̥ zɑrˤʕoː-ˈvoː lamiːˈneːhuː vaɟˈɟaːaʀ̥ ʔɛloːˈhiːim kkʰiː-ˈtˤoːov]

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[18] Orthoepic lengthening of the vowel before two weak consonants in contact: §I.2.10.

[19] The pharyngealized alveolar realization of *resh* [rˤ] is conditioned by contact with the preceding alveolar: §I.1.20. *Pataḥ* is pronounced as back [ɑ] in the environment of pharyngealized consonants: §I.2.1.3.

[20] *Deḥiq* involving the compression of the vowel and compensatory gemination of the following consonant: §I.2.8.1.2.

[21] The pharyngealized alveolar realization of *resh* [rˤ] is conditioned by the fact that it is preceded by an alveolar consonant in the same syllable and/or the same foot: §I.1.20.

וַֽיְהִי־עֶ֥רֶב וַֽיְהִי־בֹ֖קֶר י֥וֹם שְׁלִישִֽׁי׃ 13

[ˌvaˑjhiː-ˈʕɛːʀ̟ev ˌvaˑjhiː-ˈvoːqɛʀ̟ ˈjoːom ʃaliːˈʃiː]

I.5.4.2. Psalm 1

Oral Performances

	Dagesh forte—dagesh lene reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.10)	
	Dagesh forte—dagesh lene reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.11)	
	Extended *dagesh forte* reading without melody (Alex Foreman https://doi.org/10.11647/OBP.0163.12)	
	Extended *dagesh forte* reading with Sefardi melody (Alex Foreman https://doi.org/10.11647/OBP.0163.13)	

1 אַ֥שְֽׁרֵי־הָאִ֗ישׁ אֲשֶׁ֤ר ׀ לֹ֥א הָלַךְ֮ בַּעֲצַ֪ת רְשָׁ֫עִ֥ים וּבְדֶ֣רֶךְ
חַ֭טָּאִים לֹ֥א עָמָ֑ד וּבְמוֹשַׁ֥ב לֵ֝צִ֗ים לֹ֣א יָשָֽׁב׃

[ˌʔaːˌʃaˑʀ̟eː[22]-hɔːˈʔiːiʃ ʔaˈʃɛːɛʀ̟ ˈloː hɔːˈlaːaχ baːʕɑˈsˤɑːɑθ ʀ̟aʃɔːˈʕiːim wuvˈðɛːʀ̟ɛχ ħɑttˤɔːˈʔiːim ˈloː ʕɔːˈmɔːɔð wuvmoːˈʃaːav leːˈsˤiːim ˈloː jɔːˈʃɔːɔv]

[ˌʔaːˌʃaˑʀ̟eː-hɔːˈʔiːiʃ ʔaˈʃɛːɛʀ̟ ˈloː hɔːˈlaːaχ bbaːʕɑˈsˤɑːɑθ ʀ̟aʃɔːˈʕiːim wuvˈðɛːʀ̟ɛχ ħɑttˤɔːˈʔiːim ˈloː ʕɔːˈmɔːɔð wuvmoːˈʃaːav leːˈsˤiːim ˈloː jɔːˈʃɔːɔv]

2 כִּ֤י אִ֥ם בְּתוֹרַ֥ת יְהוָ֗ה חֶ֫פְצ֥וֹ וּֽבְתוֹרָת֥וֹ יֶהְגֶּ֗ה יוֹמָ֥ם וָלָֽיְלָה׃

[ˈkʰiː ˈʔiːim baθoːˈʀ̟aːaθ ʔaðoːˈnɔːɔj ħɛfˈsˤoː ˌwuˑvθoːʀ̟ɔːˈθoː[23] jɛhˈgɛː joːˈmɔːɔm vɔːˈlɔːɔjlɔː]

[ˈkkʰiː ˈʔiːim bbaθoːˈʀ̟aːaθ ʔaðoːˈnɔːɔj ħɛfˈsˤoː ˌwuˑvθoːʀ̟ɔːˈθoː jɛhˈggɛː joːˈmɔːɔm vɔːˈlɔːɔjlɔː]

3 וְֽהָיָ֗ה כְּעֵץ֮ שָׁת֪וּל עַֽל־פַּלְגֵ֫י מָ֥יִם אֲשֶׁ֤ר פִּרְי֨וֹ ׀ יִתֵּ֬ן בְּעִתּ֗וֹ
וְעָלֵ֥הוּ לֹֽא־יִבּ֑וֹל וְכֹ֖ל אֲשֶׁר־יַעֲשֶׂ֣ה יַצְלִֽיחַ׃

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[22] The short vowel in the first syllable is lengthened by a *merkha* to condition the reading of the following *shewa* as vocalic: §I.2.5.8.5. The vocalic *shewa* has *gaʿya*, which causes it to be read as half-long: §I.2.9.

[23] The initial וּ before a consonant with silent *shewa* is normally pronounced [wu] (§I.1.6.), but is here pronounced half-long due to the fact that it has minor *gaʿya*: §I.2.8.2.2.

[ˌvɔˑhɔːˈjɔː[24] kʰeˈʕeːesˤ ʃɔːˈθuːul ˌʕaˑl-pʰalˈʁeː[25] ˈmɔːjim ʔaˈʃɛːɛʀ̟ pʰiʀ̟ˈjoː jitˈtʰeːen biʕitˈtʰoː vɔʕɔːˈleːhuː ˌloː[26]-jibˈboːol vaˈχoːol ʔaʃɛʀ̟-jaːʕaˈsɛː jɑsˤˈliːjaħ]

[ˌvɔˑhɔːˈjɔː kkʰeˈʕeːesˤ ʃɔːˈθuːul ˌʕaˑl-ppʰalˈʁeː ˈmɔːjim ʔaˈʃɛːɛʀ̟ ppʰiʀ̟ˈjoː jitˈtʰeːen bbiʕitˈtʰoː vɔʕɔːˈleːhuː ˌloː-jibˈboːol vaˈχoːol ʔaʃɛʀ̟-jaːʕaˈsɛː jɑsˤˈliːjaħ]

4 לֹֽא־כֵ֥ן הָֽרְשָׁעִ֑ים כִּ֥י אִם־כַּ֝מֹּ֗ץ אֲֽשֶׁר־תִּדְּפֶ֥נּוּ רֽוּחַ׃

[loː-ˈχeːen hɔːʀ̟aʃɔːˈʕiːim[27] ˈkʰiː ʔim-kʰamˈmoːosˤ[28] ˌʔaˑʃɛʀ̟[29]-tʰiddaˈfɛːɛnnuː ˈʀ̟uːwaħ]

[loː-ˈχeːen hɔːʀ̟aʃɔːˈʕiːim ˈkkʰiː ʔim-kkʰamˈmoːosˤ ˌʔaˑʃɛʀ̟-ttʰiddaˈfɛːɛnnuː ˈʀ̟uːwaħ]

5 עַל־כֵּ֤ן ׀ לֹא־יָקֻ֣מוּ רְ֭שָׁעִים בַּמִּשְׁפָּ֑ט וְ֝חַטָּאִ֗ים בַּעֲדַ֥ת
צַדִּיקִֽים׃

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[24] The *shewa* is pronounced half-long due to its being read with *gaʿya*: §I.2.9.

[25] The vowel in עַֽל־ is read with minor *gaʿya* and so is half-long: §I.2.8.2.2.

[26] The major *gaʿya* on the long vowel in the open syllable marks secondary stress: §I.2.8.2.1.

[27] The *shewa* on a *resh* after the definite article is vocalic (§I.2.5.7.4.), although by default a *shewa* after a long vowel is silent (§I.2.5.6.).

[28] The first element of the composite accent *reviaʿ mugrash* does not lengthen the short vowel in the first syllable: §I.2.12.

[29] The *ḥaṭef pataḥ* is half-long since it has *gaʿya*: §I.2.9.

[ʕal-ˈkʰeːen loː-jɔːˈq̟uːmuː ʀ̟aʃɔːˈʕiːim bammiʃˈpʰɔːɔtˤ vaħɑttˤɔːˈʔiːim baːʕaˈðaːaθ sˤɑddiːˈq̟iːim]

[ʕal-ˈkkʰeːen loː-jɔːˈq̟uːmuː ʀ̟aʃɔːˈʕiːim bbammiʃˈppʰɔːɔtˤ vaħɑttˤɔːˈʔiːim bbaːʕaˈðaːaθ sˤɑddiːˈq̟iːim]

6 כִּֽי־יוֹדֵ֣עַ יְ֭הוָה דֶּ֣רֶךְ צַדִּיקִ֑ים וְדֶ֖רֶךְ רְשָׁעִ֣ים תֹּאבֵֽד

[ˌkʰiː-joːˈðeːjaʕ ʔaðoːˈnɔːɔj ˈdɛːʀ̟ɛχ sˤɑddiːˈq̟iːim vaˈðɛːʀ̟ɛχ ʀ̟aʃɔːˈʕiːim tʰoːˈveːeð]

[ˌkkʰiː-joːˈðeːjaʕ ʔaðoːˈnɔːɔj ˈddɛːʀ̟ɛχ sˤɑddiːˈq̟iːim vaˈðɛːʀ̟ɛχ ʀ̟aʃɔːˈʕiːim ttʰoːˈveːeð]

REFERENCES AND ABBREVIATIONS

ABBREVIATIONS

A = Aleppo Codex

BHQ = *Biblia Hebraica Quinta*

BHS = *Biblia Hebraica Stuttgartensia*, 4th ed.

BL = British Library, London

Bod. = Bodleian Library, University of Oxford

C = The Cairo Codex of the Prophets

CUL = Cambridge University Library

JTS ENA = Jewish Theological Seminary, Elkan Nathan Adler collection

L = Codex Leningradensis, St. Petersburg (Leningrad), National Library of Russia, I Firkovitch Evr. I B 19a

LB = Late Babylonian (vocalization)

LG = Lewis-Gibson Genizah collection, Cambridge University Library

NLR = National Library of Russia, St. Petersburg

MB = Middle Babylonian (vocalization)

OB = Old Babylonian (vocalization)

S = Jerusalem National and University Library, Heb. 24, 5702 (formerly MS Sassoon 507)

T-S = Taylor-Schechter Genizah collection, Cambridge University Library

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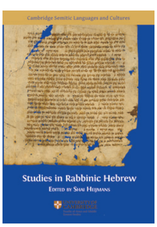
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The Tiberian Pronunciation Tradition of Biblical Hebrew (Vol. I)

Geoffrey Khan

The form of Biblical Hebrew that is presented in printed editions, with vocalization and accent signs, has its origin in medieval manuscripts of the Bible. The vocalization and accent signs are notation systems that were created in Tiberias in the early Islamic period by scholars known as the Tiberian Masoretes, but the oral tradition they represent has roots in antiquity. The grammatical textbooks and reference grammars of Biblical Hebrew in use today are heirs to centuries of tradition of grammatical works on Biblical Hebrew in Europe. The paradox is that this European tradition of Biblical Hebrew grammar did not have direct access to the way the Tiberian Masoretes were pronouncing Biblical Hebrew.

In the last few decades, research of manuscript sources from the medieval Middle East has made it possible to reconstruct with considerable accuracy the pronunciation of the Tiberian Masoretes, which has come to be known as the 'Tiberian pronunciation tradition'. This book presents the current state of knowledge of the Tiberian pronunciation tradition of Biblical Hebrew and a full edition of one of the key medieval sources, Hidāyat al-Qāriʾ 'The Guide for the Reader', by ʾAbū al-Faraj Hārūn. It is hoped that the book will help to break the mould of current grammatical descriptions of Biblical Hebrew and form a bridge between modern traditions of grammar and the school of the Masoretes of Tiberias.

Links and QR codes in the book allow readers to listen to an oral performance of samples of the reconstructed Tiberian pronunciation by Alex Foreman. This is the first time Biblical Hebrew has been recited with the Tiberian pronunciation for a millennium.

As with all Open Book publications, this entire book is available to read for free on the publisher's website. Printed and digital editions, together with supplementary digital material, can also be found at www.openbookpublishers.com

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